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THE

DUBLIN JOURNAL

OF

MEDICAL SCIENCE;

EXHIBITING

A COMPREHENSIVE VIEW

OF THE

LATEST DISCOVERIES

IN

MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.

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CONTENTS OF No. LV.

ORIGINAL COMMUNICATIONS.

Page.

ART. I.—Practical Observations on the Diagnosis and Treatment of some functional Derangements of the Heart. By D. J. CORRIGAN, M.D., Lecturer on the Practice of Medicine; Physician to Jervis-street Hospital, and to the Hardwicke Fever and Whitworth Cronic Hospitals, &c. . . 1

- Functional Derangements dependant on Gastric Irritability . 2
- Nervous Palpitation simulating permanent Patency of Aorta . 11
- Self-audible Bruit 12
- Epileptic Palpitation 14

ART. II.—An Account of an Epidemic Ophthalmia which prevailed among the Children of the South Union Workhouse during the Summer and Autumn of 1840. By CATHCART LEES, M.B., Physician to the Institution, and to the Pitt-street Institution for the Diseases of Children . . 15

ART. III.—Observations on a Mode of introducing the Catheter in difficult Cases. By CHARLES PATTERSON, M.D., Physician to the Rathkeale Infirmary and Fever Hospital . 23

ART. IV.—On Asphyxia, resulting from Wounds in the Neck. By GABRIEL STOKES, M.D. 28

ART. V.—Cases of the Venereal Disease, illustrative of the Introduction of the Venereal Poison into the System, through other Channels than by Sexual Intercourse. By CLEMENT HAMERTON, Surgeon to the Castletown Dispensary, Nobber 34

ART. VI.—An Attempt to estimate some of the characteristic Marks, by which to judge of the Cause of Perforations of the Stomach. By THOMAS WILLIAMSON, M.D., one of the Physicians to the Leith Dispensary, &c. &c. . . 37

ART. VII.—Clinical Report of Sir Patrick Dun's Hospital. By CHARLES LENDRICK, M.D., T. C. D., Queen's Professor of the Practice of Medicine, &c. 54

- Articular disease with Diffused Inflammation 57
- Diabetes Insipidus 59

Page.

Dyspepsia 61
Epigastric Pulsation 62
Fever 63
Moxa 65
Nauseous Medicines 66
Ophthalmia 68
Ossification of the Aorta 69
Prostatic Disease 70
Phthisis Pulmonalis 72
Scarlatina 74
Syphilis 76
Teetotalism 78
Ulceration of the lower Bowels 79

ART. VIII.—Some Account of the Origin and early History of the College of Physicians in Ireland. By AQUILLA SMITH, M.D., Fellow of the College of Physicians, M.R.I.A. . 81

BIBLIOGRAPHIC NOTICES.

An Inquiry into the Efficacy of Digitalis in the Treatment of Idiopathic Epilepsy. By EDWARD SHARKEY, A.B., M.D., &c. 97

Tables of Analysis in the Moist Way, and by the Blow-pipe; together with the Chemical Symbols and Equivalents. By EDWARD BRITTAN 99

A Practical Treatise on the Bilious Remittent Fever, its Causes and Effects, &c. By W. ARNOLD, M.D. . . . 100

On the Nature and Treatment of Stomach and Urinary Diseases, &c. By WILLIAM PROUT, Esq., M.D., F.R.S., &c. 102

The Anatomist's Vade-Mecum: a System of Human Anatomy. By W. J. ERASMUS WILSON. 103

The Pathology and Diagnosis of the Diseases of the Chest, &c. By CHARLES J. B. WILLIAMS, M.D., F.R.S., &c. &c. . ib.

A Discourse on the Phenomena of Sensation, &c. By JAMES JOHNSTON, M.D., of Birmingham . . . . . ib.

The Elements of Materia Medica; Part I. containing, the general Action and Classification of Medicines, and the Mineral Materia Medica; and Part II. containing the Vegetable and Animal Materia Medica. By JONATHAN PEREIRA, F.R.S. and L.S., Member of the Royal College of Surgeons, &c. 105

Lectures on the Morbid Anatomy of the serous and mucous Membranes. By THOMAS HODGKIN, M.D., formerly Lecturer on Morbid Anatomy at Guy's Hospital . . . 107

SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

Twenty-second Meeting (Mr. CARMICHAEL in the Chair) . 114

1. Specimen of the Effects of Arsenic upon the gastro-intestinal mucous Membrane. (Mr. Fleming.) . . . . . ib.

Page.
2. Ovarian Dropsy. (Mr. Ferrall.) 115
3. Neuroma. (Mr. Smith.) 116
(*a*) Scirrhous Tumour connected with the digital Branches of the median Nerve, supplying the index Finger ib.
(*b*) Serous Cyst developed in the ulnar Nerve ib.
(*c*) Enlargement of the Extremities of Nerves after Amputation ib.
(*d*) Enlargement of Nerves traversing diseased Structures . 117
(*e*) Scirrhous Enlargement of the Gasserian Ganglion . . ib.
5. Ulcer of the Stomach with Perforation. (Dr. Hutton.) . . ib.

Twenty-third Meeting (Mr. Cusack in the Chair) . . . 118

1. Cystitis from Injury of the Spinal Marrow. (Mr. Lynch.) . 118
2. Gangrene of the Lung. (Mr. Smith.) . . . . . ib.
3. Congenital Luxation of the lower Jaw. (Mr. Smith.) . . 119
4. Fungus Hæmatodes commencing in the Orbit. (Mr. Adams.) ib.

Twenty-fourth Meeting (Abraham Colles, Esq. in the Chair) 121

1. Gangrene of the Lung. (Mr. Ferrall.) . . . . . ib.
2. Dilatation of the Side, and Tumefaction of the Lung in Pneumonia. (Mr. Smith.) 122
3. Specimen of Flat Foot. (Mr. Adams.) 125

Analysis of the Waters of the African Coast and Rivers, . . 127
Iodine to Chilblains, ... 130
Treatment of Cynanche, ... 131
Iron and Zinc in Diabetes, ... 135
Acetate of Lead in Bronchitis, ... ib.
Pure Tannin a Remedy for excessive Perspiration, . . . 138
On the Lymphatics of the Brain, ... ib.
Economy in Leeches, ... 139
M. Gannel's mode of Embalming, ... ib.
Speedy and certain Rubefacient and Vesicant, . . . 143
Cure of Aphonia by Ammoniacal Vapours, ... ib.
Influence of Temperature, ... ib.
Chess and Phrenology, ... 144
Observations on Diabetes, with cases illustrative of the Efficacy of Ammonia, in the Treatment of that Disease. . . 145
Arsenic in Sulphuric Acid 150
New and successful Method of treating Disease of the Prostate Gland 151
On the external and internal Use of Veratrine, . . . 154
On the Seat of Gonorrhœa in Women, ... 155
On the Origin of Cancer in the Veins, ... 156
Treatment of Fissures of the Anus with Rhatany Injections, . 157
On the Properties of Indian Hemp, ... 158
Dr. O'Shaughnessy on the Indian Hemp, ... ib.
On the Use of Indian Hemp, and other Remedies, in Plague, . 159
On the Use of Indian Hemp in Barbary, ... ib.
Cases and Observations illustrative of the Mercurial Treatment of some Forms of incipient Phthisis Pulmonalis, . . 160

CONTENTS OF No. LVI.

ORIGINAL COMMUNICATIONS.

Page.

ART. IX.—Reflections on the Physiology of the Muscles and Nerves of the Orbit. By P. EVERS, M. D., . . . 165

ART. X.—On the Diagnosis of Abdominal Inflammations. By WILLIAM GRIFFIN, M. D., M.R.C.S.E., Physician to the County of Limerick Infirmary, &c., ... 179

ART. XI.—An Attempt to estimate some of the characteristic Marks, by which to judge of the Cause of Perforations of the Stomach. By THOMAS WILLIAMSON, M. D., one of the Physicians to the Leith Hospital, &c. &c., . . . 191

VARIETY II.—Perforation, from simple chronic Ulceration commencing in the Mucous Membrane of the Stomach, . . ib.

VARIETY III.—On Perforation of the Stomach, from the direct application of corrosive or irritant Poisons to its Mucous Membrane, ... 202

Comparative analytical Inquiry as to how far Perforations from Gastric Juice, Perforations from simple Chronic Ulcerations, and Perforations from the direct Application of irritant or corrosive Poisons to the Mucous Membrane of the Stomach, differ from or agree with, one another, ... 208

ART. XII.—On the extremely rare Occurrence of Consumption in Dingle and its Neighbourhood. By HENRY BLENNERHASSET, M. D., Tralee, ... 220

ART. XIII.—A Case of Hæmorrhagic Diathesis. By S. WILMOT, A.B., M. D., Member and Professor of Surgery in the Royal College of Surgeons in Ireland, and one of the Surgeons of Dr. Steeven's Hospital, ... 234

ART. XIV.—Remarks on the Uses of the Globules in Relation to Absorption, Secretion, and Morbid Deposition. By THOMAS HODGSON WATTS, M. D., ... 240

BIBLIOGRAPHIC NOTICES.

Page.
Researches on Operative Midwifery, &c. &c. With plates. By Fleetwood Churchill, M. D. &c. 271
On the Diseases of the Hip Joint, with Observations on Affections of the Joints in the Puerperal State. With Plates. By William Coulson. 277
The Accoucheur's Vademecum; or Modern Guide Book to the Practice of Midwifery. By Thomas Travers Burke, M. D. 282
Observations on the Surgical Pathology and Treatment of Aneurism. By William Henry Porter, A.M., . . 287

SCIENTIFIC INTELLIGENCE.

Tenth Report of the Ophthalmic Hospital, Canton, for the Year 1839, ... 290
Report of the Lying-in Hospital, Waterford, for three Years. By John Elliott, Esq., M. D., ... 293
Enormous fatty Tumour in a new-born Child, . . . 294
A Case of Injury of the Head proving fatal after twenty-six years, ... 295
Air in the Veins, ... 296
Cases and Observations illustrative of the Mercurial Treatment of some Forms of incipient Phthisis Pulmonalis, by William Munk, M. D., Physician to the Tower Hamlets Dispensary, ... 297

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN, SESSION, 1839—1840.

Twenty-fifth Meeting (Mr. Adams in the Chair) . . . 319
1. Scirrhous Development. (Dr. Law.) . . . . . ib.
2. Social Acephalocysts in the Brain. (Mr. Ferrall.) . . . 321
3. Compression of the Heart. (Mr. Adams.) 322
4. Healthy Condition of the Heart in Typhus. (Dr. Stokes.) . . 323

Twenty-sixth Meeting (Dr. Hutton in the Chair) . . . 323
1. Malignant Tumour of the Abdomen. (Dr. Law.) . . . ib.
2. Spina Bifida. (Sir Philip Crampton.) 325
3. Amputation of the limbs of the Fœtus in Utero. (Dr. Nixon.) . 327
4. Aneurism of the lower extremity of the popliteal Artery. (Mr. Adams.) ib.

NOTICES TO CORRESPONDENTS.

Communications have been received from Mr. Ferrall, Mr. Smith, Dr. Stokes, Dr. Sargent, and Dr. Cane.

The Reports of the Pathological Society for the Session of 1839 and 1840, are completed in this Number; those of the present Session will be commenced in our next.

The Editors beg to acknowledge the receipt of numerous works and journals, of which notices will be given on the first opportunity.

CONTENTS OF No. LVII.

ORIGINAL COMMUNICATIONS.

Page

ART. XV.—On the Anatomy and Pathology of certain Structures in the Orbit not previously described. By J. M. FERRALL, M. R. I. A., Member of the Royal College of Surgeons in Ireland; First Medical Adviser in Ordinary to St. Vincent's Hospital, ... 329

- Anatomy of the superior Eyelid; its Continuity with fibrous Tissues within the Orbit 334
- Anatomy of the Tunica Vaginalis Oculi and Muscles of the Eye . 336
- Inflammation of the Tunica Vaginalis Oculi 343
- Adhesion of the Tunica Vaginalis 349
- Abscesses between the Tunica and Globe of the Eye . . . 351
- Tumours within the Tunic 353

ART. XVI.—Case of Chronic Gastritis, simulating Hepatic Abscess. By JAMES F. DUNCAN, A. M., M. B., Fellow of the College of Physicians, and Physician to the Hospital of the North Dublin Workhouse, ... 356

ART. XVII.—Researches on the Diagnosis of Hernia. By P. J. MURPHY, Esq., Liverpool, M.D. 361

- Ruptured Intestine and Effusion into the Hernial Sac . . 361
- Congenital Hernia, and ulceration of the Appendix Vermiformis . 364
- Strangulated Hernia 367

ART. XVIII.—Remarks on the Uses of the Globules in Relation to Absorption, Secretion, and Morbid Deposition. By THOMAS HODGSON WATTS, M.D. 369

- Microscopic Examination of Tubercle 369
- Primary Site of Tubercle 375
- Process of Tuberculization 379
- Connexion of the plastic and inflammatory Process with Tubercle . 380
- General phenomena of Tubercalization 390

ART. XIX.—Account of a Case of Poisoning by Monkshood, which formed the Subject of a Criminal Trial; with Observations. By T. G. GEOGHEGAN, M. D., Professor of Me-

Page.

dical Jurisprudence, Royal College of Surgeons in Ireland, &c. 401

Art. XX.—A brief History of the Epidemic Small-pox, which visited Dublin in the Autumn and Winter of 1839-40. A Paper read before the Dublin Obstetrical Society, on the 7th of January, 1841. By John Ringland, A. B., M. B., T. C. D., &c. 429

BIBLIOGRAPHIC NOTICES.

Descriptive Catalogue of the Preparations in the Museum of the Royal College of Surgeons in Ireland. By John Houston, M.D., M.R.I.A., Curator of the Museum, &c. &c. . 440

Elements of Chemistry, including the most recent Discoveries and Applications of the Science to Medicine and Pharmacy, and to the Arts. By Robert Kane, M. D., M. R. I. A. Professor of Natural Philosophy to the Royal Dublin Society; Professor of Chemistry to the Apothecaries' Hall of Ireland, &c. &c. Part II. 445

An Atlas of Plates illustrative of the Principles and Practice of Obstetric Medicine and Surgery, with descriptive Letterpress. By Francis H. Ramsbotham, M. D., &c. . 446

A Practical Treatise on the Functions and Diseases of the unimpregnated Womb, &c. By Charles Waller, M.D. . 449

The Library of Medicine, arranged and edited by Alexander Tweedie, M.D., F.R.S., &c. &c. 450

SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN, SESSION 1840-41.

First Meeting (Mr. Carmichael in the Chair) . . . 455

1. Fungoid Tumours of the Cerebrum and Cerebellum. (Dr. Hutton.) . . . . . ib.
2. Plastic Inflammation of the Colon in the Infant. (Dr. Evory Kennedy.) 456
3. General Development of Tubercle, with Disease of the Thymus Gland. (Dr. Lees.) . . . . . ib.
4. Arachnitis of the Cerebellum and Pons Varolii. (Dr. Carlile.) 457
5. Fungus of the Antrum. (Dr. Kirkpatrick.) . . . 458
6. Caries of the Temporal Bone, Phlebitis of the lateral Sinus, and internal Jugular Vein. (Sir Henry Marsh.) . . . ib.
7. Aneurism of the Aorta opening into the left Ventricle. (Mr. Smith.) 460

Second Meeting (Abraham Colles, Esq., in the Chair) . 461

1. Multilocular Tumour compressing the Trachea. (Mr. Mayne.) ib.
2. Cancerous Disease of the Pylorus. (Mr. Parkinson.) . . 462
3. Enormous Umbilical Hernia. (Mr. Adams.) . . . 463

Page.

4. Ovarian Tumour. (Dr. Law.) 464
5. Enlargement of the Heart. (Mr. J. Duncan.) . . . 465
6. Loss of the Corpora Cavernosa. (Mr. Hill.) . . . ib.
7. Contraction of the Aortic Opening. (Dr. Graves.) . . 466

Third Meeting (Dr. O'Beirne in the Chair) . . . 467

1. Specimen of the Effect of a Ligature upon the Femoral Artery. (Professor Harrison.) . . . . . ib.
2. Permanent Patency of the Aortic Valves. (Dr. Corrigan.) . ib.
3. Aneurism of one of the Sinuses of Valsalva. (Mr. Carmichael.) 468
4. Caries of the Temporal Bone. (Mr. Hamilton.) . . 469
5. Acute Pneumonia in Children. (Dr. Lees.) . . . 470
6. Fungus Hæmatodes. (Dr. Hutton.) . . . . ib.
7. Fatty Degeneration of the Liver. (Dr. Stokes.) . . 472

Fourth Meeting (Professor Harrison in the Chair) . 472

1. Caries of the Temporal Bone. (Mr. Hamilton.) . . ib.
2. Disease of the Spine. (Dr. Bigger.) 473
3. Glanders in the Human Subject. (Dr. Hutton.) . . . 474
4. Chronic Rheumatic Arthritis of the Jaw. (Mr. Adams.) . 477

On the Syphilitic Diseases of the Lung, by William Munk, M. D., Physician to the Tower Hamlets Dispensary . 478

THE

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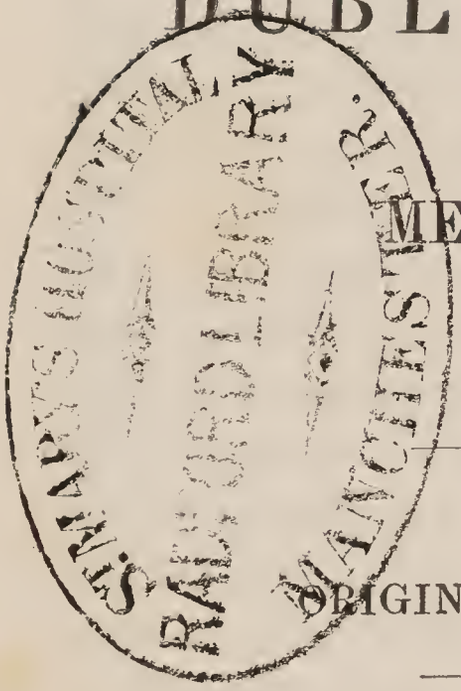

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Practical Observations on the Diagnosis and Treatment of some functional Derangements of the Heart.* By D. J. CORRIGAN, M.D., Lecturer on the Practice of Medicine; Physician to Jervis-street Hospital, and to the Hardwicke Fever and Whitworth Chronic Hospitals, &c.

THERE are some functional derangements of the heart, which are rarely seen in hospital practice; a notice of them may, perhaps, not be uninteresting.

FUNCTIONAL DERANGEMENT OF THE HEART IN GROWING PERSONS.

This affection is met with in both sexes; but we are most often consulted about it occurring in boys, probably from their active exercises rendering the attacks more observable.

The boy, often taken home from school from the alarms caused by it, has observed that an attack of palpitation has occurred when out walking, or exercising with the other boys. In some instances, although not common, the first attack has

occurred at night. The attacks gradually become frequent, and at last so violent, that he is obliged to abstain from exercising, or if exercising, is forced to sit down. Those attacks are renewed whenever he attempts a repetition of exercise, and at last he dreads even walking. He is now prevented from joining his companions in their sports; this preys on his spirits, and after confinement in his study, or sedentary occupation at his desk, very slight exercise, sudden rising even from a chair is now sufficient to bring on an attack, and take away his breath. The attacks then begin to come on at night, or in lying down; or are produced even by any change of posture. In some of those cases there is a disposition to bleed from the nose, and the hæmorhage is occasionally very profuse, and this, coupled with pain of the side, which is occasionally present, leads to a treatment not calculated to amend the symptoms. The boy is denied animal food. He is sent to the infirmary of the school, and given tartar emetic and bled, or lowered in other ways by purgative or nauseating medicine. He is at last sent home, and the physician then sees him a boy very tall, or small and slight for his age, with little development of trunk, narrow chested, and with long thin arms and legs; and he is generally slightly bowed in the shoulders from some bending forward of the spine. The pulse has become habitually quick, beating probably 120 or 130 in the minute; and on laying the hand over the region of the heart, the first impression made on the examiner is, that there is great hypertrophy of the left ventricle, as it is felt thumping over a large space, and apparently with great strength. A little further examination will, however, shew that this is a deception arising from a combination of causes. The contraction of the ventricle is *quick*, and hence the impression of it gives a more palpable impression to the hand than a contraction of equal strength, but slower. The chest being generally narrowed, or drawn in, the heart, as in females, lies with a greater extent of surface close to the ribs, and the hand of the observer feels necessarily the impulse over a larger space; and as this space

increases, the hand laid over it will receive a corresponding increase of impulse, even though the strength of the organ be not increased, just as the hand laid over the large sac of an aneurism will, from increased extent of surface, receive a corresponding increase of impulse, even though the active force distending the sac is not greater than that exerted on a neighbouring artery, which gives an impulse immeasurably less to the perception of the observer. The deceptive sensation produced on the hand, when the heart gives a large extent of surface of impulse, is very likely, if its cause be not remembered, at once to make the practitioner suppose, in such a case as that described here, that he has to deal with a greatly enlarged and powerfully acting heart, when the organ is really the very opposite of this as to strength of muscular fibre. It is, I believe, as a general rule in such cases, safer and better to judge of the strength of the heart by the force of the blood impelled by it than by any indication of its state supposed to be furnished by auscultation of its action. It is, I believe, also more rational to judge of the power with which the organ acts, (except in obstructions of its orifices,) by feeling the force of the fluid sent out by it along the main trunks, than by drawing an opinion from degrees of intensity of sounds and impulse, on which, perhaps, no two observers will agree. It is more reasonable to judge of the strength of the action by the momentum of the propulsion than by the recoil of the organ, or the noise of its action.

These observations are called for in relation to the class of cases I am now noticing ; for if the idea be taken up, that auscultation will give the best information as to the muscular acting power of the heart, an error will, I am sure, very often be committed on this point, particularly when, as in such cases, the action of the heart is, as I have already observed, *quick*. In using the word *quick* here, it is to be understood in its accurate sense, not as synonimous with frequent, but as applied to the time occupied by *each* contraction of the ventricle. The heart and pulse may beat only 50 in the minute, and yet be quick, that is, each contraction may be

so sudden as to occupy an exceedingly short space of time, and when either pulse or heart rises thus very suddenly under the finger, the suddenness of the impression gives a very deceptive sensation to the ear and finger. I know, from observing it frequently committed by the most intelligent clinical clerk, that such a mistake is easily made, and I have, therefore, thought it not amiss to notice it here. This error is always easily guarded against, by using two fingers to feel the pulse in doubtful cases, and ascertaining what degree of pressure of the finger nearer the heart is required to prevent the impulse from reaching the finger farther off. In this way it will often be found that a pulse, at first reckoned strong, will bear scarcely any pressure, although the arterial tube may be remarkably full. There is another diagnostic aid by which to come to a conclusion as to the existence of hypertrophy, or enlargement of the heart. I have never seen a case of hypertrophy with dilatation of the left ventricle, where *post mortem* examination unequivocally proved the existence of the disease, that the impulse of the heart was not felt out of its normal situation. Indeed it cannot be otherwise; for as the heart enlarges from base to apex it makes room for itself, not by pushing out the cartilages of the ribs before it, but by turning its apex round more and more to the left side according to the degree of enlargement, so that in cases of great enlargement the apex of the heart will be felt beating in a line dropped from the axilla. The distance to which the apex has travelled will be a measure of the degree of enlargement. In a case which occurred very lately in the Whitworth Hospital, it was repeatedly noted during the life-time of the patient, that the impulse extended so far to the left as to correspond with a line dropped from the axilla. On the *post mortem* examination the heart was found greatly enlarged. I exhibited the organ at a late meeting of the Pathological Society.

The sounds of the heart are louder than natural in those cases; but there is no morbid sound, nor bruit de soufflet in any of its varieties, even where the palpitation is increased by exer-

cise. There is in some of those cases a curious circmmstance observable; the boy who cannot run or walk a hudred yards without palpitation will swim for a very long time without being in the least incommoded by the action of the heart, probably from the spinal muscles not being disturbed with the weight of the trunk in the latter exercise; but whatever the cause, the occurrence is useful as an aid in our diagnosis. There are occasionally cramps in the legs at night which point to spinal or muscular debility, as an important element in such cases. In some cases the symptoms have arisen at school without any appreciable cause as the origin; in other instances the disease has begun in boys who have been taken from a country life, or from school, and sent into an office, which has suddenly changed the boy's habits to a sedentary life.

The following two cases will illustrate the preceding observations:

In February, 1837, I saw Master H——, 16 years of age, then at school; he suffered very much from palpitation on making any exertion or attempting to join in the recreations of the school; he was tall and thin for his age, of fair skin and florid complexion, and very liable to bleedings from the nose; he complained at that time of no other symptoms, and on examination of the heart's action the sounds were natural but very loud; there was nothing more perceptible than a very *quickened* action of the heart against the narrowed and drawn-in parietes of the chest; he had been under various modes of treatment without relief; he returned to school with those symptoms, and was taken away from it in May following, with considerable aggravation of his suffering; he had now, in addition, pains in his left side, palpitation, greatly increased on making the least exercise, pains and occasionally cramps in the legs; he had, in the interval between February and May, grown very tall, but not strong in proportion; he had at school been put on low diet, tartar emetic, broths, and purgatives; I ordered him sea air, sea-bathing, and full diet, and put him on iron. I saw him more than once ex-

cel most of his fellow-bathers in swimming, although he could not yet walk quick on land without urgent palpitation. In the course of the summer he recovered perfectly.

Case II.—Jan. 5, 1839. Master L——, ætat. 16, was brought to me; he was very tall for his age, had grown up very rapidly, and had been for upwards of a year and a half suffering from palpitations. They become very troublesome on lying down; but they frequently attack him during the day, and are brought on by very slight exercise. The action of the heart is irregular, and it beats over a very large space; its action is *quick* and loud. Occasionally there has been for some days an attack of severe pain in the interscapular region; but no uneasiness of the spine on pressure.

He got three drops of Hydrocyanic Acid every night in ʒi. Mist. Camph. and half a grain of Sulph. Quin. ter in die. The palpitations were rapidly relieved, but not removed. He was put upon full diet and wine, and in the course of the summer he recovered; the palpitations gradually wearing out.

Case III.—In Sept. 1840, I was consulted by a young gentleman, 14 years of age, who had come from the country to follow a profession in the city, which demanded from him close attention and confinement. He soon began to suffer from palpitations, (which attacked him, for the first time, in the middle of the night,) accompanied with pain in the left side, occasionally very severe, and with the usual *quickened* action of the organ, felt as if beating strongly against the drawn-in parietes of the chest. The palpitations at last attacked him indiscriminately at all times, often seizing him in bed, and accompanied with pain and rapid pulse. The pulse then became permanently rapid. These symptoms were relieved by hydrocyanic acid and belladonna liniment over the præcordial region. He went to the country and grew better; but very soon after his return to town the palpitation again attacked him, although less in degree. Under a steady and constant use of iron, and, occasionally, a dose of

hydrocyanic acid with valerian, his distressing symptoms are gradually wearing out.

I have only broadly sketched those cases as illustrative of the class, omitting all the minor diagnostic signs.

Those cases are distinguishable, it is obvious, rather by negative than by positive signs. The only positive sign we, perhaps, have, is the quickened action of the heart, combined with its natural although loud sound; but we have as negative signs, the absence of permanent bruit de soufflet, the absence of all signs of those diseases, such as tubercular deposition, pericarditis, valvular diseases, &c., to which we could assign the palpitation. We thus arrive at a knowledge of the case, rather "par voie d'exclusion" than by a direct indication; but the diagnosis is not the less correct on this account.

The knowledge that we acquire is in like manner desirable, not more often for what we have to do in the case than for what we are to leave undone. Depleting and lowering plans of treatment impede the general growth, interfere with the full development of chest and muscular growth of the heart itself, and aggravate all the symptoms, while if we take the growing boy from his studies, and give him good air, full diet, and sea bathing, he will gradually, as he gathers strength, become free from his distressing symptoms; and we can assist nature by lessening the nervous irritability of the organ by hydrocyanic acid, and favour the growth of constitutional strength by preparations of iron, &c.

FUNCTIONAL DERANGEMENTS DEPENDANT ON GASTRIC IRRITABILITY.

I intend, under this head, to notice some of those affections which seem to be the connecting link between the slighter attacks of dyspeptic palpitation, and those severer cases that rank under the head of confirmed angina. The feature in them to which I would wish to draw attention is this, that the effect,

viz., the functional derangement of the heart, and the uneasy symptoms referred by the patient to the region of the heart, continue long after the cause has ceased to exist, or to be a prominent feature in the case. In many instances months have elapsed after the gastric or intestinal derangement, which had been the original cause, has ceased to be troublesome; in some instances even years. There is one symptom which is very rarely absent in those cases, indeed which is so frequent, that I should be almost inclined to look upon it as diagnostic, where it exists a feeling of diffused pain extending over the whole or greater part of the left mammary region, sometimes, but not often, extending more or less into the left arm. This sensation is at times very distressing, occasionally burning or acute, and even then, if the patient be asked where it is, he places his spread hand over the mammary region, seldom able to localize it exactly. There is another feature in most of those cases, the palpitation is not increased, or not much, by exercise. I believe in those cases the stomach at all times contains a considerable quantity of air, not sufficient often to produce any marked distention, but always recognizable by percussion. The sounds of the heart are free from any bruit, but they present more especially the first sound, a very peculiar characteristic. I can compare it, I think most accurately, to the sound which we might suppose the heart to make if it lay, when acting, on a drum head. It is a remarkably clear, resonant sound, but not louder, save as to clearness, than natural. It is probable this character is given to it by the neighbourhood of the larger cardiac portion of the stomach which contains, as percussion indicates, a considerable quantity of air. The character given to the sound of the heart, in such cases, may be compared, although in a minor degree, to the resonant character given to the voice and cough in pneumo-thorax. In some cases the functional derangement of the heart, and the accompanying distressing symptoms, if not generated, have been kept up and aggravated by the use of tobacco. Cases of this order may be divided into two classes

as to treatment, one, where there is gastric or intestinal irritability still present, in which medicines of a sedative class, such as hydrocyanic acid are advisable; the other, where the original irritability of stomach or intestinal canal has been succeeded by a state of atony or want of tone, in which the internal exhibition of preparations of iron and carbonate of ammonia is attended with most benefit. In both classes of cases, however, there is an external application, on which, I believe, more reliance can often be placed than on internal remedies; it is the croton oil liniment, made by dissolving ʒi. ol. crotonis in ℥i. ol. terebinth. rectificat. With this, the whole left mammary region is to be rubbed once a day until the eruption appears, when its use is to be discontinued. It is again to be employed after an interval of a few days, when the effect of the previous application has died away, and its use is thus to be continued for many successive times. I believe there is something specific in the action of the ol. crotonis in such cases. I know that I have used other counter-irritants, without obtaining at all as good effects. A rigid rule of diet is of course necessary, but it is not requisite here to do more than mention it.

Case.—May 14th, 1840. Mr. M——th, ætat. 23, consulted me for palpitations, which have caused him great alarm. Under the idea that he has been suffering from organic disease of the heart, he has feared to take exercise, and yet it is not when he is exercising that he suffers most, but when he is quiet after exercise, or when he is lying down at night. Often, after lying down, the palpitation becomes so troublesome, as to keep him awake during the greater part of the night. After meals also the palpitation is very troublesome. His stomach is occasionally flatulent; the pulse is regular; there is no abnormal sound accompanying the heart's action. The region of the stomach is remarkably clear on percussion, and the first sound of the heart has quite a drum-like resonance. About four or five years ago he suffered very much from pyrosis and flatulence, which were accompanied with the commencement of the palpi-

tations. The pyrosis and flatulence were cured, but the palpitation has continued rather to increase; I assured him that he had no organic disease, desired him to lead an active life, and ordered him gutt. iij. of hydrocyanic acid, to be taken when the palpitation was troublesome, and croton oil liniment over the mammary region, and left hypochondrium. I saw him again on the 4th June; he was very much better, the palpitations troublesome only after a meal.

Case.—November, 1837. Mr. G———, ætat. 25, had been actively engaged in the last Spanish campaign, in the Queen's service. In common with his comrades, he had suffered much hardship, and while enjoying rather a scanty supply of solid food he had often sustained himself on very strong green tea and tobacco. About twelve months before his return he began to suffer from palpitations, which have continued to increase up to the time of his consulting me, including the last twelve months which he has spent at home; in all a period of two years from the time they first attacked him. He is never altogether free from palpitation, but it is not increased by ordinary exercise. An attempt, however, to ascend a hill brings it on; he never suffers from dyspnœa, and the pulse is regular. He is acutely sensible to changes in the weather, the approach of rain invariably bringing on palpitation. He is in good flesh, without any expression of anxiety in his countenance; his general health is good. I ordered him a belladonna plaster over the region of the heart.

Camphor gr. iii. Acetat. Morphiæ gr. $\frac{1}{4}$ om. nocte;
Et ʒ ii. Infus. Gent. c. Carb. Ammon. gr. v. om. mane.

I directed him also to abstain from smoking and tea.

I saw him again on the 8th December; he had scarcely a trace of palpitation, and had not felt so well for two years previously.

NERVOUS PALPITATION SIMULATING PERMANENT PATENCY OF AORTA.

This affection is seen, so far as my experience goes, only in females, and is particularly remarkable for the extreme similitude it takes on to the organic disease. It accompanies chlorosis, and then there is not so much risk of confounding the functional with the organic disease; but I have seen it frequently where there was no palpable sign of chlorosis, the accompanying symptoms being only those which are usually observed in neuralgic females. The form of nervous palpitation to which I allude is, I believe, only one of the Protean forms in which hysteria shews itself; and when it occurs, as it sometimes does, alone, it assumes the most extraordinary resemblance to permanent patency of the aorta. There is the same increased action of the heart itself; there is the same visible pulsation of the larger trunks about the neck; there is fremissement in those trunks, where they can be reached by the finger, and there is along the arch of the aorta, and in the carotids and subclavians, as loud bruit de soufflet. The history of the case, and a careful examination of it for other signs of hysteria, will aid us, but will not be sufficient for our diagnosis; but there is one diagnostic sign, on which, I believe, the utmost reliance may be placed, viz., the peculiar character of the bruit de soufflet in the carotids. In permanent patency of the aorta, *the bruit in the carotid is synchronous with the diastole of the arteries, and there are just as many bruits as pulsations;* the intervals between the bruits being as well marked as the intervals between the pulsations. In the hysteric or chlorotic affection, the bruit is not only irregular, ceasing and returning, but when present, it often assumes a continuity of sound, that is never, I believe, observed in the organic disease. *It is not confined to the duration of the diastole of the artery, but is very frequently a continuous, uninterupted, long, rumbling sound, which not only accompanies the pulsation, but extending*

through the intervals of rest, occupies in this way the time of many pulsations. It is this peculiar character, never I believe observed in the bruit accompanying permanent patency, which distinguishes the nervous affection from the organic disease. Sometimes, while the ear of the observer is still on the stethoscope, this long, rumbling bruit suddenly stops, and nothing is perceived in its stead, but the natural pulsation of the artery. At other times, this continuous bruit changes abruptly into a bruit synchronous with the pulsation of the artery, and which, while it lasts in this latter form, is not to be distinguished from the bruit of organic disease. In pointing out this peculiar character of the bruit as its diagnostic character, I would wish to make it clearly understood that I do not intend to convey, that the nervous affection may not present a bruit exactly similar to that of organic disease, but to convey this, that it very often presents, in addition, the continuous rumbling bruit which I believe is diagnostic of its nature; in other words, the organic disease presents only the ordinary interrupted bruit, while the nervous or hysteric affection will often give two forms of bruit, the ordinary one as above, and its own peculiar form, the continuous rumbling bruit.

SELF-AUDIBLE BRUIT.

Every one who has spent many hours in writing or close study, is sensible at times, when fatigued by long mental exertion, of becoming painfully conscious by a loud bruit, of the motion of the blood in the internal carotids, and probably in the other arteries of the brain. In two cases which have come under my observation, this morbid sensibility extended still further, and the individuals who consulted me for it were annoyed by a painfully loud bruit, which accompanied the action of the heart, heard by the individuals themselves, extending from the region of the heart upwards towards the head. In one case it was always perceived on awaking in the morning,

and was accompanied with pain across the forehead and eyes, and a choking sensation referred to the throat. It was never observed, while the individual was actively engaged during the day, but on sitting in a silent room the sound became so loud as to be painfully disagreeable, and to prevent continued attention to any subject. In the other case the sound was never absent day or night when the patient was awake. The sound often varied, as the patient described it, in tone, being sometimes a purring, rushing sound, at other times a sharp whistling sound. In neither case, even when the sound to the patient himself was loudest and most painful, could I detect the slightest trace of bruit in the heart or arteries, and the action of the heart was perfectly regular. It seems as if in those cases the cardiac nerves became endowed with a morbid sensibility, so as to make the individual sensible of the motion of the blood through the heart, or along the large trunks, just as nerves will sometimes convey sensations from an organ, of the action, or even existence of which, in health, an individual is not conscious. As far as the very few opportunities I have had of seeing this rare affection enable me to pronounce an opinion, I would say, that the circumstance of the sound being audible *alone* to the patient, and not discoverable by auscultation, is diagnostic of there being no organic disease. As to treatment, local blood-letting and purging were rather injurious than otherwise; the distressing noise was at once arrested by a draught of carbonate of ammonia, with Hoffman's liquor and tra valerianæ; but this, after a time, lost its effect, and the morbid sensibility gradually disappeared under change of air, scene, and occupation. There is another form of self-audible bruit de soufflet which sometimes accompanies an organic disease, permanent patency of the aorta, and which is very distressing from its loudness. The organic disease is, perhaps, very trifling in amount, and does not incommode the patient much; but he no sooner lays his head on the pillow, than the rushing sound begins and continues for hours, until he is

harassed, and kept from rest by it as effectually as if a bell were ringing at his ear. He is worn out by want of sleep, and at last dreads the hour for retiring to bed. It is easily distinguished from the purely nervous case by this, that the bruit is audible not only to the patient himself but also to the auscultator. In this case hydrocyanic acid, in a dose of three drops, will frequently act like a charm, the sound being instantaneously arrested by it.

EPILEPTIC PALPITATION.

In the form of epilepsy, known as silent epilepsy, the heart is often referred to as the origin of the symptoms when the brain or nervous system is the offending organ. The simulation of heart disease, which silent epilepsy sometimes assumes, is much closer than might be imagined. In this form of epilepsy the attack goes no farther for years, sometimes for life, than a temporary loss of consciousness, and sometimes of muscular power. The patient may stagger, perhaps fall, but this latter occurrence is rare. On recovering from, or on the coming on of the attack, there is fluttering and palpitation about the heart; the loss of consciousness and the staggering or fall are described as fainting, and the occurrence of fluttering or palpitation seems to point out the heart as the seat of the evil. There is even in such cases an instinctive unwillingness on the part of the patient to acknowledge the head to be at all engaged, and it is often only on cross-examination we find out from the patient that he is subject to attacks of vertigo, coming on not when in active exercise, or engaged in any effort that would quicken the circulation, but when perfectly at rest, or when lying down. If the patient, generally between the ages of twenty and thirty, and otherwise in good health, have recourse to a free use of stimulants, under the impression that from the occurrence of fainting, &c., the affection is one of nervous debility, the symptoms are not generally amended, nor will the patient, on the other hand, bear much depleting or lowering treatment. The

management that I have generally found beneficial in such cases is, an abstinence from all stimulating substances, with, at the same time, a full allowance of plain nourishing food, and, for medical treatment, a continuance, for a considerable time, of counter-irritation on the nape of the neck, either by the repeated application of antimonial ointment or by the insertion of an issue; and occasionally some other remedies applicable to such cases are required, as sulphate of quinine, nitrate of silver, &c.

In noticing those functional affections of the heart, if I have not gone into as minute or as lengthened details of diagnosis and treatment as might seem at first sight requisite, it is because I believe it is necessary only to point out the principal leading features; the discrimination of my readers will supply all my omissions better than I could myself.

ART. II.—*An Account of an Epidemic Ophthalmia which prevailed among the Children of the South Union Workhouse during the Summer and Autumn of* 1840. By CATHCART LEES, M. B., Physician to the Institution, and to the Pitt-street Institution for the Diseases of Children.

ALTHOUGH some writers have lately attempted to deny, (on the plea of simplifying ophthalmology,) that there are specific diseases of the eye, that is, diseases assuming distinctive anatomical characters, because the patient is under the influence of some peculiar general affection; and although fully aware, that many epidemics of ophthalmia have been accurately described, as each narrator, either led astray by a minute application of particular symptoms, or influenced by the charm of novelty, has thought that he had something new to communicate; yet I think that it may not be uninteresting to the Profession to give a brief account of an epidemic ophthalmia which has prevailed in the workhouse of the South Union among the children, upwards of four hundred having been attacked with it.

I feel more anxious to publish this account, because the system of congregating large masses of the poor together in this country being now on trial for the first time, and undergoing a period of probation, it may induce such of my professional brethren as have the charge of similar establishments in the country, to place on record the history of such diseases as may prove epidemic, endemic, or contagious, in their several institutions; for, by a reference to such records, we may hereafter have an opportunity of judging whether diseases undergo any material alteration in their nature and constitution in different situations at the same time, or in the same situation at different periods of time; also, whether they can be accounted for by any general causes, any peculiar condition of the atmosphere, or by the operation of some unknown local causes, not perceptible to our senses, and known to us only by their effects. Thus the simultaneous and successive influences of any morbid cause over large communities may disclose relations which may set us on the track of discovering the virtual identity of many diseases, which, in the present state of our knowledge, constitute interesting but unsatisfactory and difficult objects of inquiry.

The ophthalmia commenced on the 4th of June last, in a part of the institution (separate from the main body of the building) alloted for the children, and capable of containing four hundred, situated in an open and salubrious place, having a southerly aspect, but which, from being over crowded, as well as from some other defects, has proved the most unhealthy part of our establishment, an epidemic of petechial fever having broke out there a short time previously.

The weather at this time was very cold, with sharp winds; so that in the first few cases I considered it as simple acute ophthalmia, excited by particles of dust having been blown into the eye; however it spread so rapidly, and assumed such a decided catarrhal character, with a peculiar state of conjunctiva and pupil, that I was led to regard it as an epidemic disease, and in this opinion I was confirmed by Mr. Creighton, who immediately

recognized the disease as one which they frequently suffered from while he had charge of the Foundling Hospital, and which he regarded as of a highly contagious character.

I shall now briefly describe a few of the cases, sufficient to illustrate the principal features of the disease; but as the general treatment of this epidemic presented nothing peculiar, I shall not detail it, but I wish to call attention to the local application, which was very simple and efficacious, and I think not in sufficient usage in this country, namely, the undiluted liquor plumbi subacetatis dropped into the eye. This mode of treatment is peculiarly serviceable in a large institution like the poorhouse, where the expense of leeches would prove considerable, exclusive of the trouble, and the risk of inducing erysipelatous inflammation in such unhealthy habits.

Case I.—Anne Magill, æt. 11, says she went to bed perfectly well on last night, (June 22,) she awoke with a sensation of sand in her left eye; there is now profuse lachrymation, with great itching; no intolerance of light; the pupil is largely dilated, and very sensitive, the palpebral conjunctiva, semilunar fold, and caruncle are very fluid, villous, with slight stringy discharge on the lower lid, which comes away easily, but forms again in a few minutes; there is no pain, except at night, nor constitutional disturbance complained of; but the tongue is swollen, flabby, coated with yellow fur.

℞. Calomel iij., Rhei. gr. x ij. H. fiat Bolus.

And wash the eye with tepid water.

Next day the conjunctiva covering sclerotic was greatly congested, vessels of bright red with slight ecchymosis, as if they had given way in some places, profuse lachrymation, with stringy, mucous discharge from both eyes. I dropped into both eyes the undiluted liquor plumbi, it did not cause much pain, but was decomposed immediately, forming a dense white deposit. I also ordered a collyrium of lead lotion.

Next day, the eyes were greatly improved; I pursued the

same treatment. On the third day, as she was nearly well, I contented myself with the lotion, and gave her some bark and magnesia, which cured her perfectly in a week.

This is one of the purest forms, occurring in a healthy child without any complication, and showing the efficacy of the treatment by the liquor plumbi. I had previously used the nitrate of silver in the proportion of gr. vi. ad ʒ i.; but as this caused severe pain and discoloured the integuments, I generally preferred the undiluted liquor plumbi.

Case II.—John Sheridan, a healthy boy, æt. 5, has the conjunctiva of both eyes greatly congested, with profuse lachrymation, the eyelids red, from constant rubbing, for the last two days; there is no intolerance of light, but he says that there is sand in his eyes, particularly at night; the pupils are largely dilated, and very sensitive to the stimulus of a strong light; the ocular conjunctiva appears to be covered with minute granulations, transparent, running along the course of the vessels, but quite distinct from them, and, on examining with a lens, the same appearance is discernible on the cornea; the palpebral conjunctiva is very villous, with a stringy, mucous discharge. I applied nearly the same treatment as in the former case, and with similar results.

The peculiarity of this case consists in the granular state of the conjunctiva, which appeared to constitute a distinct character, which I have since met with in several cases, and which is quite distinct from that affection termed granular lid, which is so often the result of common catarrhal ophthalmia, if neglected or badly treated.

Case III.—I contracted the disease myself, and can therefore detail the sensation caused by it. I had spent the morning among these cases, and then went away to the country; while driving, on a car, about three hours after leaving the institution, I suddenly felt as if a grain of sand had been blown into my eye, in fact I could not keep my fingers from rubbing the lid; there was a constant flow of tears, so that I had to return home,

and immediately submitted myself to treatment. My friend Mr. Hamilton does not recollect whether the pupil was dilated, but he was greatly struck by the deep congestion of the vessels of the conjunctiva, coincident with the total absence of pain, or ordinary symptoms of inflammation, as, except for the constant itching and profuse flow of tears, I felt in other respects perfectly well.

Many cases, presenting nearly similar appearances, but in a very early stage and a mild form, were cured by merely changing the air, cleanliness, and some mild aperient.

There was generally but little or no constitutional disturbance, in some there was slight catarrhal fever. The disease was, however, very liable to relapse more than once, and then became always more serious and intractable, particularly in strumous subjects, in whom it invariably became pustular, with a ferretty condition of eye, and great intolerance of light. Those who have had opportunities of witnessing the rapid spreading of catarrhal ophthalmia in large institutions or among soldiers, cannot doubt its contagious character. I use the term, in a comprehensive sense, without reference to the distinction between infection and contagion, as I regard it as not only communicable by actual contact of morbid secretion, but also through the medium of the atmosphere, the air becoming, as it were, tainted.* Indeed almost every adult who was occupied about these children suffered from its effects; but in them it generally assumed a more serious aspect, being more painful, and attended by severe chemosis, of which the following case is a good example.

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* During this period of time many cases of common catarrhal ophthalmia occurred at the North Union Workhouse, also in the workhouse at Cork, where my friend Dr. O'Connor wrote me word that it had been very severe. Dr. Fisher has informed me that it has been very prevalent among the military, chiefly the infantry, many of whom were drafted into the Royal Infirmary for it.

I also find that in the October Number of Johnson's Medico-Chirurgical Review notice is taken of a very severe form of ophthalmia which the Belgian army have suffered from for the last few years.

Case IV.—Biddy Walsh, æt. 40, has intense conjunctivitis of both eyes, with chemosis, cornea is bright, pupils largely dilated, but very sensitive to the action of light, profuse lacrymation, intolerance of light; palpebral conjunctiva highly injected, very villous, with stringy, mucous discharge; eyelids swollen, red from the constant rubbing, caused by intolerable sensation of sand in her eyes; it is of three days' duration; her tongue is foul, but otherwise there is not much constitutional disturbance. As this was the first case attended by such severe signs I was afraid to trust solely to the liquor plumbi, so that I applied the undiluted liquor plumbi to her left eye, which had first been affected, and I applied six leeches to the right eye, and put her on some antimonial medicine. The next day the right eye was much worse, the chemosis increased, but the left eye was much better, I dropped in the undiluted liquor plumbi to both, and next day had the satisfaction of finding them both greatly improved; under this treatment she got rapidly well, but the dilated state of the pupil continued for some time.

The peculiar feature which this case (in common with the others) presented, was that of the largely dilated pupil, which has been characteristic of this form of ophthalmia, and which I have not seen or heard of having been taken notice of by any of our writers on this subject, nor has any surgeon with whom I have conversed seemed to be aware of the fact. Several gentlemen have examined it with me, among others, Mr. Hamilton and Mr. Carlile, Lecturer on Anatomy in Park-street School, who were much struck by the appearance. As the object of this communication is purely practical, I shall content myself with stating the fact, (leaving it to others to theorize on the physiology of this dilatable condition of the iris,) and shall now relate a case where this pathognomic character of the disease prevented my committing a mistake, and subjecting a patient to a severe and unnecessary plan of treatment, but in which, from a previous reasoning, I would have been justified.

Case V.—A. B., æt. 20, was under my care for gonorrhœa,

in October, the discharge was subsiding under treatment, when, about the twelfth day, he came to me complaining of a sensation as if there was sand in his eyes; he said that the right eye felt itchy last night; but that this morning both were affected. There was intolerable itching, with slight mucous discharge; in fact, presenting the symptoms of incipient gonorrhœa ophthalmia. I was, however, greatly struck by the dilated state of the pupil, and thinking that it might prove to be a case of the epidemic ophthalmia, I ordered him a brisk purgative, dropped into the eye a mild solution of the nitrat. argent. and desired him to send me word, in case that his eyes should become worse. He was much better on the next day, and recovered perfectly in a few days, under very mild treatment.

The practical bearing of the diagnosis in the above case is fully illustrated by the following extract, which I copy from Tyrrell on the eye, one of the latest and best authors on this subject in the English language.

"There is not any thing in the aspect of the first stage of the complaint to create an alarm in the mind of any one, who has not seen much of this terrible affection, and therefore, the most simple remedies alone are frequently resorted to; such, however, is the frightful rapidity with which the disease passes from this stage to the destructive termination, that in the lapse of twenty-four hours, in sone instances, the mortification of the cornea is complete, and the medical attendant who has left his patient on one day, with what he considered as an unimportant ophthalmic affection, is horror-struck on the succeeding day to find the organ irrecoverably lost for visual purposes."

If we reflect on those cases which I have described, I think that they must tend to prove that there is some peculiar morbific essence generated by the congregation of the human species, and which manifests itself either externally in this form, or presents itself under some other shape, as erysipelas, diffuse inflammation, hospital gargrene, &c., or it marks itself under the cloak of some internal disease, thus we are all aware

that some contagious disease, as typhus, frequently originate in the animal body, when subjected to the action of certain external causes, as from overcrowding, or ill-ventilated apartments, of which Dr. Southwood Smith (in his valuable evidence before the House of Commons) has given numerous instances taken from the records of work-houses and hospitals. In all my cases there appears to have existed a great tendency to increased action of the mucous system, marked externally by the villous and granular condition of the conjunctiva, while I have no doubt but that internally there existed a similar condition of the mucous follicles of the intestine, for during this period of time many of the children became affected with a low form of fever, diarrhœa, peevishness, one of them died, and dissection revealed an extraordinary development of the glandulæ agminatæ of the lower third of the ileum. Although I do not wish to theorize, or to draw any inference from solitary facts, yet I think that this tends to prove an identity of disease; indeed, acting on this principle, the treatment was nearly the same, as change of air, counter-irritation, with very mild astringents, soon recovered them.

From a review of all these facts, I think that analogy will justify us in inferring, that the one virus is capable of producing different forms of disease, according to the texture on which it falls; and that what we can see externally, in some cases, may be taken, with certain allowances, as an index to the state of parts concealed from sight; indeed, in many cases, the eye appears, as it were, a speculum, in which the physician may study the characters of many diseases reflected on its surface, for as scarlatina is recognized not only by its eruption, but by its sore throat and subsequent anasarca, rubeola by its ophthalmia and bronchitis, so it is probable that all the organs of the economy have some peculiar character impressed on them, depending either on the constitution of the patient, the specific nature of the disease, or the *constitutio anni*, exclusive of the simple distinction into acute and chronic.

ART. III.—*Observations on a Mode of introducing the Catheter in difficult Cases.* By CHARLES PATTERSON, M. D., Physician to the Rathkeale Infirmary and Fever Hospital.

DR. O'BEIRNE, in giving directions for passing an elastic tube up the rectum, says; "if it," the tube, "cannot be introduced higher up without much force, attach to it the syringe, and, dipping the point of the latter into the fluid to be injected, let an assistant give two or three rapid strokes of the piston, and so bring the full force of a strong and unbroken column of fluid to bear upon the point of resistance, and, while this is doing, let the surgeon urge the tube firmly upwards, and it will generally pass the obstruction as if through a narrow ring."—*Dublin Medical Journal*, vol. xiv., p. 125. On reading this passage, at the period of publication, about two years back, it occurred to me, that a similar manœuvre might be successfully employed to pass the catheter in those cases where enlargement of the prostate gland renders it difficult to do so. This suggested itself to me the more readily, from having been a short time previously in attendance on an old man with enlarged prostate, into whose bladder it was not easy to introduce a catheter. It was not long until I had an opportunity of putting the suggestion in practice in another patient, in whose case, the instrument not passing freely, I took a large sized silver catheter, which happened to have the eye very near the end, and introduced it as far as the obstruction; I then forced a stream of warm water through the urethra, at the same time depressing the instrument, when it immediately entered the bladder with the greatest ease.

In this case, it is most probable, that from my eagerness to try the experiment, I had recourse to it unnecessarily, and that the instrument might just as readily have passed where it did without the pioneering of the water. But in a few weeks I was again called to the old man, above alluded to; he had been forty-eight hours without passing any water; and a practitioner,

who was very expert in the use of the catheter, had already, in various attempts, failed to introduce it; I made use of every legitimate exertion and manœuvre, but was also unable to pass the instrument; I then forced a stream of water through the obstruction, when, after about two or three ounces of that fluid had been injected, the urethra became very much distended, and the catheter passed into the bladder with very little difficulty.

I have since employed the same means, under similar circumstances, on one or two other occasions, and always with success. I do not mean to say, that, in these instances, the instrument could not have been otherwise introduced into the bladder, but, having experienced much difficulty in endeavouring to accomplish that object, instead of persevering in embarrassing attempts, I had recourse to the above stated means, which had the effect at least of greatly facilitating the operation.

I have also used this contrivance to introduce the catheter in a case very different from the above. The patient laboured under most distressing inflammation of the mucous membrane of the urethra, and his bladder was greatly distended with urine, which he could only pass in drops and in extreme agony; there was a most unbearable desire to empty the bladder, occasioned in a great measure, it may be presumed, by that organ's partaking of the inflammatory action. The morbid sensibility of the urethra was such as that no instrument of any kind could be introduced, and the patient's impatience could not wait the abatement of the inflammation, under the employment of the most active means. In this case I attached an injecting apparatus to a curved elastic catheter, and, having inserted the extremity of the tube a little way within the orifice of the urethra, I, in the gentlest manner, injected, or rather insinuated a little warm decoction of linseed, just so as moderately to distend the urethra; I then gradually urged the catheter onwards, and succeeded in getting it into the bladder, with little or no pain or inconvenience to the patient.

The injecting apparatus which I have employed is very simple; it is formed by merely attaching a small bladder to the end of the catheter, after the manner of a mounted enema pipe; the bladder need not be large, one that holds about half-a-pint of water will be sufficiently so; and the catheter must be furnished with a small cork, having a piece of twine fixed to it, just like the cork of an enema pipe. The largest sized catheter the urethra will admit of should be used, that the impetus of as large a jet of water as possible may act on the obstructed part of the canal, and also that the urethra being filled by the instrument, the fluid may be easily prevented from returning by the side of the catheter. The eye must be large, and very near the end of the tube; or, what is better, the tube should have a large orifice within the circumference of its anterior extremity, with the edge rounded in so as that it shall not hurt, or catch the lining membrane of the passage. Also it must be a silver or permanently curved elastic catheter: for the injecting apparatus would prevent the withdrawal of the stilet necessary to maintain the curvature of a common elastic one.

The instrument, having the attached bladder properly adjusted, is to be passed down to the obstruction: if it cannot now, on further trial, be made to enter the patient's bladder, it must be held by an assistant, while the small cork is being inserted into its outer end: about six ounces of lukewarm water are to be poured into the injecting apparatus; the latter must then be closed, and tied as near as possible to the fluid, so as to exclude every portion of air. The operator is next to encircle the penis with the finger and thumb of his left hand, making gentle circular pressure to close the urethra round the catheter; he will then, having first withdrawn the cork, embrace the bladder of water with his right hand, so as to be able to apply strong and uniform pressure on as much of its surface as possible, in doing which, its contents being continuously and forcibly propelled into the urethra, and the handle of the instrument being

at the same time depressed, the latter at once passes with facility into the patient's bladder.

The left hand, in holding the penis, should be quite passive, allowing the utmost freedom of motion to the catheter; the right hand should not touch any part of that instrument, but manœuvre it through the medium of the attached bladder of water, in the act of compressing the latter, so that its extremity may be free to follow, as it were spontaneously, the course the current of water opens before it.

It is not difficult to comprehend the mode in which this operation facilitates the passage of the catheter. The patient's bladder, being full of urine, opposes considerable resistance to the influx of the water forced through the instrument; this fluid then, pouring into the urethra, forcibly distends that canal and the neck of the bladder; and, from the circumstances of their connexions, the distention principally takes place in the direction of the rectum, forcing the tumid middle lobe of the prostate backwards and downwards, and so diminishes the obliquity of the passage. It may be, also, that when the patient's bladder admits a portion of the injected fluid, its increased distention, from that cause, aids in drawing backwards the enlarged lobe of the prostate, in the way Sir Everard Home states partial relief to occur naturally in such cases, when, about the third day of the obstruction, the bladder, becoming extremely distended with urine, its posterior part bulges backwards, and draws the swollen lobe with it.

Thus the distention of the urethra, its acquirement of a more normal direction, and the altered position of the tumid lobe of the prostate gland, all concur in allowing the instrument to glide with ease into the patient's bladder.

At the moment of compressing the apparatus, and forcing its contents into the patient's urethra and bladder, he complains of a sense of painful distention in the hypogastric region, and a most urgent desire to make water. The complaining of distention might lead one to dread rupture of some portion of the

patient's bladder, from a continuance of the forcible injection of the fluid. But if we reflect how that viscus is uniformly supported by the abdominal parietes, and on the great strength of its own tissue, it will be evident that such an action can hardly occur from the indirect force of the operator's hand; besides, we have the fact, that however distended the bladder becomes in cases of retention of urine, from whatever cause, its parietes never give way, except under the process of sloughing: that there is no such danger to be apprehended is also proved by the simple experiment of forcing water, in a similar way, into the bladder of a sheep or calf, when it will be found that the utmost force of compression, exerted by both hands, will be insufficient to rupture it. As to the patient's desire, however pressing, to make water, we should pay no attention to that, but still persevere in the endeavours to pass the instrument. Should the practitioner yield to the patient's entreaties, and withdraw the catheter, it is obvious that the tumid portions of the prostate will close in on the passage, and present the same obstacles as before to the expulsion of the urine.

For the injecting apparatus a pig's bladder will be found to answer much better than an elastic bag or syringe, in allowing freedom of motion to the catheter, and ease of management to the hand.

In cases of stricture, M. Amussat of Paris has forced water with a syringe through the obstructed part of the urethra, and having, in that way, dilated the passage, the urine flowed by the patient's own expulsive efforts. It is scarcely necessary to remark, that this plan would not afford relief in cases of obstruction from enlarged prostate. The water might be forced easily enough into the bladder, but the expulsion of the urine would be prevented by the valvular action, or collapse of the gland and neck of the bladder.

Of course the practised operator, who is every day in the habit of using the catheter, will rarely, indeed, have occasion to use any other means than the tact and dexterity of his own fingers;

but the less experienced are liable to find themselves in embarrassing circumstances from the very great difficulty they occasionally meet in introducing that instrument; to such the simple plan now proposed may, perhaps be found of not a little advantage.

Art. IV.—*On Asphyxia, resulting from Wounds in the Neck.*

By Gabriel Stokes, M. D.

It appears to be the general opinion of writers on the subject of suicidal cutting of the throat, that death in such a case may either take place immediately, or that the individual escaping from the first danger may live, in some instances days, in some weeks, and then die of some of the after consequences of the wounds; and that when death takes place immediately on the infliction of the injury, it is from hæmorrhage, the result of a wounded bloodvessel. Numerous cases are on record of transverse wounds of the neck, dividing the trachea completely across, and even the œsophagus where death was not an immediate consequence; and when death was immediate in these cases, it has been heretofore uniformly attributed to a wound of some of the large bloodvessels producing a fatal hæmorrhage. Every surgeon of experience knows that the suicide is frequently foiled in his attempt on his life in this way, in consequence of inflicting the wound too high up in the neck, when the great vessels from their retreating direction escape injury; and it is consequently said, that suicidal wounds in the upper part of the neck are not so likely to be immediately fatal as those situated lower down: this, as far as death from hæmorrhage is concerned, is true; but it appears to me, that when a deep transverse wound is made between the thyroid cartilage and the os hyoides, although none of the larger vessels of the neck are touched, that death takes place as certainly and as instantaneously as if the carotid artery and jugular vein were divided; and that in this case

death is the result of *asphyxia*, induced by the fall of the epiglottis on the rima, where, acting as a valve, it effectually puts a stop to respiration. This accident was first noticed and put upon record by Mr. Houston, in the fifth vol. of the Dublin Hospital Reports. His case is as follows, page 315:

"In March, 1828, a servant out of place, residing in Duke-street, during a fit of delirium brought on by intoxication, attempted to destroy himself by cutting his throat with a razor. I saw him in about ten minutes after, and found him almost lifeless. The pulsations of the heart were imperceptible, the pulse at the wrist had ceased to beat, the limbs were cold, and all feeling and consciousness lost. The wound, which was frightfully deep, extended more towards the left than the right ear. The razor had entered between the os hyoides and the thyroid cartilage, and disunited them so completely as to allow the former to ascend with the tongue into the mouth. The pharynx was laid wide open, and the epiglottis severed from its attachments to the tongue and os hyoides, and left hanging by its pedicle to the back of the pomum adami. The carotids had escaped untouched, and the bleeding was inconsiderable. It appeared difficult at the moment to account for the sudden extinction of life; the symptoms were evidently those of suffocation, but the cause was not at first understood. I passed my finger into the wound, and found, to my surprise, that the epiglottis, loosened from its upper and lateral attachments, had fallen back over the rima glottidis, and completely intercepted the passage of air to the lungs. I raised the obstructing body and drew it forwards; the chest soon after began to heave, respiration returned, the heart and pulse again beat, and consciousness and sensibility were re-established.

It required some effort of my fingers to hold up the epiglottis, as the air at every inspiration tended to force it back again to its unnatural and dangerous position."*

While thus occupied with the patient, Surgeon Porter entered the room; I explained to him the singular nature of the

case, and how between my fingers and thumb I held the regulation of the man's life or death. The top of the epiglottis was then brought over the edge of the thyroid cartilage, and secured to its anterior surface by a single stitch. The man in a short time sat up and attempted to speak, but was unable to articulate. He was taken into the Meath Hospital under the care of Mr. Porter, from whom I learned that he never recovered from the delirium which led to the perpetration of the act, and died in about a week after, of erysipelatous inflammation of the neck and throat.

The circumstance which had so nearly extinguished the life of this individual the instant after the wound was inflicted, is too plain to require comment; but the fact of its occurrence, and of the facility with which the immediate danger arising from it may be averted, is too important not to be made generally known. A respite of life for even a few hours, in cases such as this, may be often of infinite value."

Now, but for the knowledge of this case, I would, in all probability, have overlooked the nature of that which occurred to myself, and which I shall now give :

On the morning of the 29th of July, 1840, I was called in haste to visit Stephen Kelly, in Moira Place, who had, in a fit of delirium, cut his throat a few minutes previous to my being called upon; on entering the house I was told that he was dead. Not more than twelve or fifteen minutes had elapsed, as well as I could ascertain, since he had committed the deed ; I found the body lying on a bed, several persons in the room, among whom were Surgeon Williams, and Mr. O'Reilly, the apothecary to the South Eastern Dispensary. A gaping lacerated wound was seen across the upper part of the neck; not more than eight or ten ounces of blood appeared to have been lost, which was collected into one spot on the floor; the face was livid, the lips blue, and the eyes bright and shining; under these circumstances it immediately occurred to me that the man had died not from hæmorrhage, but from suffocation, and that

it might be a case similar to that described by Mr. Houston. I proceeded to examine the wound, which was about three inches in length, much lacerated, and passing obliquely between the thyroid cartilage and the os hyoides, the right ala of which was severed from the rest of the bone.

The attachment of the epiglottis to the hyoid bone was completely divided, and this cartilage was laid down over the rima quite flat, with the apex resting on the back of the pharynx; all the superior connexions of the epiglottis were divided also, and when lifted off the rima glottidis it immediately, on being set free, fell back again.

As far as I could then see, no large bloodvessels had been divided.

On inquiry, I found that Mr. O'Reilly had seen him a very few minutes after the wound had been inflicted, and he stated to me that when he first arrived the heart was still beating, though feebly, and that there were slight convulsive efforts to breathe, during which the veins in the neck were seen to swell considerably, but that these appearances soon ceased.

Through the kindness of Surgeon Williams I was allowed to be present at the dissection made at the coroner's inquest five hours after death.

The face was still livid, the surface of the body quite cold, cadaveric rigidity considerable. On examining the wound it was found to extend obliquely across the upper part of the neck, being about three inches in length; and the structures connecting the thyroid cartilage to the body of the os hyoides were divided; the right ala of the bone itself was cut off; the attachment of the epiglottis to the hyoid bone was divided, while that to the thyroid cartilage remained untouched; the frænum epiglottidis was cut, and the epiglottis lay upon the rima, completely closing that opening.

On dissecting off the integuments from the side of the neck, the external jugular veins were found untouched, and enormously distended with dark venous blood, so as to resemble

in point of size the internal jugulars; the carotid arteries, with their accompanying veins and nerves, were found uninjured, the veins greatly distended, the lingual and superior thyroid arteries were divided, as also the lingual nerve.

On opening the thorax the lungs collapsed, and the air escaping raised the epiglottis. The lungs were healthy, and but little engorged; the right auricle was much distended with black coloured blood, as was also in a less degree the right ventricle, the coronary veins were remarkably distended, and stood out in relief on the surface of the heart, their dark colour forming a remarkable contrast to the natural red colour of the heart.

The abdominal viscera were healthy, the stomach and intestines remarkably contracted.

The head was not examined.

The cause of the fall of the epiglottis upon the rima in these wounds of the neck which divide the parts between the thyroid cartilage and the os hyoides, will be at once understood by an examination of the anatomy of the part; we see the epiglottis to be attached to the thyroid cartilage and to the os hyoides by two ligamentous cords, that connecting the epiglottis to the os hyoides, possessing a great degree of elasticity. Now the epiglottis is retained in its upright position by the action of this ligament, and also by the folds of mucous membrane which are reflected on it from the root of the tongue, these are put on the stretch when the epiglottis is laid over the rima by the passage of the alimentary bolus, and the ligament then, by its elastic reaction, restores the fibro-cartilage to its natural position. In wounds then inflicted in this part of the neck this ligament is divided, the epiglottis falls loose into the pharynx, and on the first inspiration is laid down over the rima glottidis.

This accident appears to have escaped the observation of all the systematic, surgical, and medico-legal writers with which I am acquainted.

Beck, indeed, gives a case in a note abstracted from the

third vol. of the Boston Medical Magazine, of a man who in a state of delirium attempted to strangle himself, being unable to effect this, he went to the window and having broken out a piece of glass, wounded himself with it under the angle of the lower jaw, and by a rapid succession of cuts, extended it from side to side, but fell immediately into the arms of his companion, and after gasping two or three times was dead. Not more than sixteen ounces of blood were lost. On dissection no injury was found to have been done to the trachea or large vessels; a superficial vein in the neck was found to be wounded, and which, as stated by the reporter, was probably the external jugular from which the bleeding arose; and the suddenness of the death in this case is ascribed to the entrance of air into this wounded vein, but I am strongly inclined to think that this was one of these cases where death results from asphyxia, produced by the fall of the epiglottis.

Blandine, in his Anatomie Topographique, anticipates the occurrence of this accident in speaking of wounds of the neck; he says, "the epiglottis, however, being thus detached, may, by its fall on the larynx, be productive of serious danger;" but it does not appear that such a case ever came under his observation. Now it appears to me that the importance of a knowledge of these cases to the practical surgeon is obvious. Had not Mr. Houston, by a remarkable degree of tact, detected what was the cause of asphyxia in his case, the man must have perished before him instantly, and had the gentleman who first saw the case which I have reported, been aware of its nature, he might probably have for the time preserved the life of the patient.

But to the medical jurist a knowledge of these cases is of the highest importance. It frequently happens that persons are found dead with the throat cut, when it becomes a question whether the cutting of the throat was the cause of death.

Now, if hæmorrhage be the only cause of sudden death in these cases recognized by medical men, it is obvious that where

this has not taken place in any fatal quantity, they will feel disposed to give it as their opinion that death was produced in some other way, and thus may fall into a very serious error, from an ignorance of the fact which I think must now be admitted, namely, that in some cases of cutting of the throat sudden death is produced by *asphyxia.*

ART. V.—*Cases of the Venereal Disease, illustrative of the Introduction of the Venereal Poison into the System, through other Channels than by sexual Intercourse.* By CLEMENT HAMERTON, Surgeon to the Castletown Dispensary, Nobber.

CASE I.—Anne Gerrard, æt. 25, married in 1834. In the fourth month of pregnancy she was infected by her husband, and in a few weeks afterwards was covered over with a papular eruption; at parturition she had a sore breast; her child, when born, was in a very weak and sickly state, and in four days it died. Soon after her delivery, she and her husband went to Dublin, where her husband remained six weeks under mercurial treatment; she returned home after one week's stay in town. In June, 1838, I first saw her, she had miscarried five times since her husband was salivated, at periods extending from the sixth week to the seventh month. By my advice she took blue pill for some weeks; her mouth became fully affected. In June, 1839, she again became pregnant, and in March, 1840, gave birth to a healthy and plump child. Up to the present time (January, 1841) the child is healthy. Her husband did not take any mercury from me.

CASE II.—Mary Duffy, æt. 30, sister to Anne Gerrard, living in the next cabin, finding her sister suffering from a sore breast, and her weakly infant not able to draw it, gave her strong and healthy child to draw it for her, at the same time taking her sister's weakly infant to her own breast. In a fortnight afterwards her breast became sore, and her child, previously a plump, healthy infant, became weak, sickly, emaciated, and covered with a copper-coloured rash. In August, 1837, she first con-

sulted me, and related that she and child had been under mercurial treatment, without, however, having been fully under its influence; her child, six months' old, has, on the left cheek, a depressed ulcer, and close to the verge of the anus a soft, condylomatous excrescence has existed for some time; on examining the mother I find there exists at the angle of her mouth a fissure extending outwards, and on turning out the lip, a hardness is to be felt of the mucous membrane immediately around it. To the child I gave hydrargyum c. creta, one grain twice a day, and directed black wash to be applied to the affected parts; under this treatment the child recovered; I could not prevail upon the mother to take any mercury; the sore lip became worse, and in September, 1837, she consented to be put under a course, the mercury quickly affected her, there was a great degree of ptyalism; she could not be persuaded to continue its use. At the time she was taking the mercury she was pregnant, and miscarried, giving birth to a putrid child. In a year afterwards, (September, 1838,) she gave birth to a living and apparently healthy child; in a few weeks it was brought to me, having a copper-coloured rash on its thighs and buttocks, before the appearance of the eruption the child was constantly crying, losing flesh, and refusing the breast. I now insisted upon the mother taking mercury, and prescribed half a drachm of mercurial ointment to be rubbed in night and morning. In a week's time the child was evidently worse, I desired the mother to continue rubbing in the ointment, and to bring back the child in another week; she did so. The child presented the most worn out, emaciated appearance possible, with features so attenuated as to resemble extreme old age. I now put the child under mercurial treatment; in a week's time there was the greatest improvement. While taking the mercury, the local symptoms would disappear; as soon, however, as it was omitted, a spot or two re-appeared; this occurred several times. At present the child, two years' old, is quite well, the mother also. Her husband has been quite free from any venereal symptom at any time: he has taken no mercury.

Case III.—Mary Fay, æt. 25, servant to Anne Gerrard, contracted a sore lip from drawing the breast of her mistress; the nipple was ulcerated at the time; in a few weeks afterwards a scaly eruption appeared on her forehead and scalp; she also had a sore throat. When she consulted me (September, 1838) she had a node on the shin, and pains in her limbs; she also previously suffered from two miscarriages, and had taken mercury irregularly, and without ever been properly salivated.

I advised her to take more mercury, so as properly to affect her mouth; she did so, and in (November, 1839) one year after the mercurial course, she gave birth to a healthy infant; up to the time I write this (January, 1841) the child is healthy. Her husband never had a venereal symptom, nor took a grain of mercury.

Case IV.—Mary Carberry, æt. 60, a midwife, attended Mary Fay, in September, 1837, and delivered her of a putrid child, at about the seventh month. At the time of her attendance she had a scratch on the palm of the hand, which, in three weeks, had degenerated into a foul ill-conditioned ulcer, attended with swelling of the surrounding parts. It was treated locally with black wash and mercurial ointment; eight weeks afterwards she came to the Dispensary with iritis, and papular eruption. While this woman was under treatment for the sore hand, and before the appearance of constitutional symptoms,

Case V.—Thomas Carberry, æt. 56, her husband, had the most severe phagedenic ulceration of the prepuce, by which it was entirely destroyed. This was followed by a general crop of papular eruption, which resisted treatment; he was nearly five months before he was quite well; he declares he had no intercourse with any woman but his wife.

The above cases have been under my observation for more than three years, and up to the present all venereal symptoms are absent. The different modes in which the disease has been communicated to the several individuals above recorded may be thus briefly recapitulated.

A healthy child is applied to the breast of a venereal nurse, in a couple of weeks syphilis shews itself in the child. A venereal child is applied to the breast of a healthy woman, soon afterwards she gets a syphilitic sore of the breast, which contaminates her system. A servant girl sucks a venereal sore breast, she gets a venereal ulcer of the mouth, which taints her system. The midwife has a slight scratch on the palm of the hand, and in delivering a putrid venereal child, she gets a sore on the hand which infects her system; and lastly, the husband of the midwife is diseased at the time the ulcer exists upon his wife's hand. The husbands of Duffy and Fay had not a single syphilitic symptom, nor did they take any mercury. The only inference I think warranted from the above cases (differing from the received opinions) is, that when the death or disease of the children has been caused by a syphilitic taint in the mother, not received from the male parent, it is not necessary to subject the latter to a mercurial course. A reference to Doctor Collis's Practical Observations on the Venereal Disease, in his chapter on Syphilis in Infants; to some observations related by Doctor Beatty in the fourth volume of the Transactions of the King and Queen's College of Physicians; to Doctor E. Kennedy's communications on this subject to the Pathological Society of Dublin; and also, to Doctors Maunsell and Evanson's work on the Diseases of Children, will shew the importance of the facts narrated in this respect.

ART. VI.—*An Attempt to estimate some of the characteristic Marks, by which to judge of the Cause of Perforations of the Stomach.* By THOMAS WILLIAMSON, M. D., one of the Physicians to the Leith Dispensary, &c. &c.

IT is not my intention, in the limits of this paper, to claim much of originality, or for one moment to innovate so far upon

the beaten path of knowledge, as to attempt the advancement of any new doctrine, further than which is already pretty generally known; my sole object and design is to generalize the facts already discovered, in connexion with the subject title of this paper, and I conceive that in this way a very extensive field is open for inquiry. I, therefore, propose to treat of perforations of the stomach, as arising from three different causes, viz. Variety first—Perforation, resulting from the chemical action of the gastric juice, or acid, after death; Variety second—Perforation from simple chronic ulceration, commencing in the mucous membrane; and Variety third—Perforation of the stomach, from the direct application of corrosive or irritant poisons to its mucous surface; after which we shall institute a comparative inquiry into the appearances which these varied perforations present, and by means of which we may be enabled to refer each to its true cause.

Variety I.—*Perforation from Gastric Acid.*—The phenomenon under consideration, we take for granted, is now so generally acknowledged, along with the theory of its production, as to render it altogether superfluous and unnecessary for us, in this communication, to waste time, by referring to cases of a date prior to the year 1772, when, from the appearances recorded to have been observed upon dissection, or from the previous history of the case, there can be no doubt, that though considered in another light, the seeming morbific lesion of the villous and other coats of the stomach, supposed to have been the result of a vital process, was neither more nor less than that chemical change which had been effected upon the tissues of the stomach after death, through the agency of the gastric juice. Before proceeding farther in this subject let us first, for a little, direct our attention to the sentiments of Hunter upon this important point, and afterwards compare the opinions and writings of those who have succeeded him in this department. In virtue of a law which infinite wisdom has ordained, the "Succus Gastricus," or secretion of the stomach, (in ordinary circumstances,) is

only possessed of the property of acting upon, and dissolving animal substances unendowed with vitality, the immense importance of which restriction must be at once evident, for had it been otherwise, had it been capable of affecting an organized tissue, in which the vital principle resided, in common, and with as much ease as that from which life had fled, then the inevitable consequence must have been, that according to our present conformation, the gastric acid secreted by the stomach would have at once produced the destruction of the latter; in obedience, therefore, to this law, we find the gastric juice only exercising its agency upon dead matter, while the coats of the stomach are themselves safe from its operation. Now, under peculiar circumstances, it has been found that no sooner does life become extinct, in carniverous animals especially, than the stomach *itself* is unable to withstand the dissolving powers of this acid, which alive it had secreted, but now no longer in possession of the living principle, it may be considered exactly in the light of the other aliment, for which, during life, it formed the receptacle; consequently, it is not wonderful that after death we should find it exhibiting appearances of digestion. "The first time," says Mr. Hunter, "that I had occasion to observe this appearance, where death had been produced by violence, and where it could not, therefore, easily be supposed to be the effect of disease, was, in a man who had his skull fractured by one blow of a poker; just before this accident he had been in perfect health, and had taken a hearty supper of cold meat, cheese, bread, and ale; upon opening the abdomen I found that the stomach, though it still contained a good deal, was dissolved at its great end, and a considerable part of its contents lay loose in the general cavity of the belly, a circumstance which puzzled me very much. The second instance was in a man who died at St. George's Hospital, a few hours after receiving a blow on his head which fractured his skull; from these two cases, among various conjectures about so strange an appearance, I began to suspect it might be peculiar to cases of fractured skull, and

therefore, whenever I had an opportunity, I examined the stomach of every person who died from that accident, but I found many of them which had not this appearance."* From this quotation it will be evident that dissolution may advance so far as to create large perforations of the stomach, and so permit its contents to escape into the general abdominal cavity; it is of essential importance then to be aware of this circumstance, and to know in what the appearances of this opening differ from those produced by other causes; in a medico-legal point of view it is especially necessary, as will be seen by referring to the trial of Mr. Angus, for the murder of Miss Burns, at Liverpool, in the year 1808.

Mr. Hunter, in describing this perforation, says, "The edges of this opening appear to be half dissolved, very much like that kind of solution which fleshy parts undergo when half digested in a living stomach, or when acted upon by a caustic alkali, viz., pulpy, tender, and rugged;" in talking of the frequency of occurrence, at least of *erosion*, he says, "To be sensible of this effect nothing more is necessary than to compare the inner surface of the great end of the stomach with any other part of the inner surface; the sound portion will appear soft, spongy, and granulated, and without distinct blood-vessels, opaque and thick, while the other will appear smooth, thin, and more *transparent*, and the vessels will be seen ramifying in its substance; and upon squeezing the blood which they contain from the larger branches to the smaller, it will be found to pass out at the digested end of the vessels, and to appear like drops on the inner surface."†

Mr. Hunter seems to lay great stress upon *transparency*, as indicative of the solution in question, and in our opinion it is one of those changes most to be depended on, for, in consulting different authors in their descriptions of appearances, we

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* Hunter's Animal Economy, page 230. † Opera citata.

almost invariably find them making use of this term, "*transparency,*" for the purpose of expressing, more correctly, one of the distinguishing characters of this softening. With regard to the appearance which the blood-vessels present when "squeezed from the large branches to the smaller," though we do not, for one moment, pretend to doubt the accuracy of the statement; yet, we would take the liberty of suggesting, that this appearance *is not invariable,* and must be received in a limited sense; it must altogether depend upon the particular position of the abraded tissue at least; so far as direct experiment has carried us, it has been principally, if not solely, confined to the splenic extremity of the stomach, where the magnitude and abundance of blood-vessels are more apparent; but even allowing that the *erosion* takes place at the splenic extremity, we are not, on that account, even then to suppose that this peculiar appearance always exists. In such as are cut off by sudden and violent death, and who were previously in the possession of the best health, it is more natural to suppose, that the appearance in question will be perceived, because in such the function of digestion may be vigorous; shortly after, perhaps, having satisfied the cravings of hunger; consequently, the whole vascular system being full, such individuals present the greatest likelihood of verifying the assertion of Hunter. Indeed, Mr. Hunter's cases were chiefly those of sudden death.* Though this congested state of the blood-vessels may sometimes accompany the digested stomach; it by no means follows that the *erosion* may not be observed, without the smallest evidence either of blood-vessels or drops of blood; it is not, therefore, to be wondered at, nor does it all contradict the opinion of Hunter, (though it renders it more equivocal,) that in a number of cases we should find no appearance of blood-vessels at all, for frequently the

* In experimenting upon the lower animals, especially the *sow,* when death had been both sudden and violent, this appearance (in part) might be perceived in one, while in another, *killed every way under similar circumstances,* no evidence of it was to be found.

patients in whom this gelatinization of the stomach has been observed, have been such as were the subjects of previous disease, under treatment in hospital, or the inmates of public charities, in whom the non-appearance of the blood-vessels of the stomach is only relative to the general anemic state of the body.

In the year 1810, Mr. Burns, in his very able "Observations on the Digestion of the Stomach after Death,* materially tended to strengthen and confirm the agency ascribed to the gastric juice by Mr. Hunter, as the following quotation will clearly shew:—"About ten months ago I had occasion to open the body of a very emaciated and anasarcous young girl who had died from scrofulous enlargement of the mesenteric glands; on raising the covering of the abdomen, the stomach, which was empty, presented itself to view, with its front dissolved; the aperture was of an oblong shape, about two inches in its long diameter, and an inch in its short, with tender, flocculent, and pulpy edges; this I demonstrated to the pupils attending my class, and I especially called their attention to the fact, that the liver, which was in contact, had no impression made on it; having proceeded thus far, I placed all the parts as they had been, stitched up the abdomen, and laid the body aside in a cold situation for two days, then I opened it again in the presence of the same gentlemen, and we found that now the liver, where it lay over the dissolved part of the stomach, was pulpy; its peritoneal coat was completely dissolved, and its substance was tender to a considerable depth; at this time the other parts of the liver were solid as before, and as yet every part of the subject was free from putrefaction; the posterior surface of the stomach, opposite to the hole, was dissolved, all except the peritoneal coat; at least the internal coats were rendered pulpy and glutinous; the peritoneal covering had become spongy and more transparent than it ought to have been; there *was no blood*

* Sixth Vol. of Edinburgh Medical and Surgical Journal.

contained in either the vessels of the stomach, or other abdominal viscera; the appearance of the dissolved part of the stomach, and the digestion of that part of the liver which was over the hole, will be sufficient to prove, that the solution in this case was really produced by the gastric juice; this being certain, I may be permitted to mention, that the situation of the aperture was different from what it had been in any of Mr. Hunter's cases; it was seated on the forepart of the stomach, about an inch distant from the pylorus, and midway between the smaller and greater curvatures of this viscus, at a part of the stomach with which the gastric juice could not have come in contact with, as the body had constantly been in the supine position."

We have been thus lengthy in our quotation from Mr. Burns, as it places before us an early and most convincing proof of the post mortem agency of the gastric juice, over the coats of the stomach, and other organs, as well as mentions what we now know to be perfectly correct, (though on a different principle than that ascribed in Mr. Burns,) viz., the fact of the perforation occurring in other parts than the fundus. Mr. B. differs from Hunter in supposing that any part of the stomach can be dissolved; this he attributes to the vessels which secrete the gastric juice, still retaining within themselves a sufficient quantity for this purpose. There cannot be a doubt but that the fundus of the stomach is most often the seat of this solution; but it is equally correct to say, that no portion of the inner surface of the stomach is exempt from it; much in this way depends upon the position of the body after death. We have, in this manner, been enabled at pleasure to vary the seat of perforation; for this purpose we procured the stomachs of swine, (as belong to an omniverous animal,) immediately after the animal to which they belonged had been killed; these we suspended, so as to permit various portions of the stomach to assume the most dependent position, in an empty vessel, the temperature of which ranged from 70° to 75° Fahrt.; from time to time,

we glanced at them, in order to observe the external changes which were effected. After the lapse of twelve hours, (in some instances,) we could discover the external serous membrane assuming a yellowish appearance, with here and there, but principally towards the splenic extremity, the bluish trace of blood-vessels; twenty-four hours having elapsed, the yellowish colour had greatly increased; in forty, there was an evident tinge of blue, discernible over the whole aspect of the membrane, and evidently taking the place of the previous yellow colour, the blood-vessels, by this time, were not quite so distinct as formerly; from this to the ninetieth hour the bluish tint gradually increased in intensity, the serous membrance being smooth, moist, and glistening, of a *pearly transparency*, and seemingly not far from giving way; *this* took place generally between 80 and 110 hours after death, in the sow, and was greatly proportionate to the relative quantity of fluid contents in the stomach, taking place earlier, when the quantity was greater.

Upon laying open the stomachs, after rupture had been effected, some slight variety was observable on their inner surface; although, generally speaking, they presented all the appearances so characteristic of this change; by this time a great proportion of the mucous membrane had become softened and eroded; the mucous membrane surrounding the cardiac opening, for a considerable space around, seemed to withstand the dissolving power of this acid longer than any other part of the stomach's surface. A very uniform appearance observed on this cardiac portion, was a degree of pink coloration, of a much more delicate hue than many other spots diffused over the stomach; in no case, however, were we able to discover, within the space of this coloration, the smallest evidence of blood-vessels, and it was only after having cut down to the sub-cellular tissue, that we were enabled to detect them.

In some instances which occurred to us, upon a *superficial* examination, one would be very apt to conclude, (were the same appearances presenting themselves, in the stomach of man, where

poisoning had been suspected,) that such in reality had taken place, from the exhibition of some of the corrosive or irritant poisons; for here and there, surrounded by a *seeming* blush of inflammation, there appeared as if ulceration had taken place, (and exactly in those situations where arsenic might be supposed to attach itself to,) viz., in those sulci, or grooves, formed by the contraction of the muscular coat underneath, causing evident projecting eminences, or ridges, within and between the meshes, or intervening hollow spaces, of which, this appearance was observed; but, upon more close inspection, and after having minutely inspected these solutions of continuity, by powerful artificial means, we then found that what had seemingly afforded them an inflammatory base, was neither more nor less than the same species of violet coloration which we have before observed, as occurring frequently around the cardia, and wholly divested of the appearance which an inflamed surface usually presents, not the vestige of a blood-vessel being within view. These small *pseudo-morbid ulcers* (if we may be allowed the expression) generally appeared to us to commence in the following way;—upon laying open the stomach of a sow, probably thirty hours after death, small bloody spots may be here and there observed; these, upon being more closely examined, will be found to assume the appearance more of extravasated blood than that contained within vessels, the situation of which is, generally speaking, between the small folds of the mucous membrane. This appearance, it may be remarked, is not always at first sight very apparent, although the coloration usually is; but for its development, it will be necessary to wash or clear away the viscid and tenacious mucous-like substance which covers them, then the appearance in question will be visible; it is in this extravasated portion then, that we have invariably found the commencement of that process which terminates in perforation; a small, well defined abrasion of variable depth now exists; upon closing the stomach, and again covering this small erosion with the viscid substance previously alluded to, and delaying further

examination for sixty or seventy hours more, at the expiry of this time, important alterations will have been effected. In some cases, (of the reason of which we are ignorant,) complete perforations will have taken place, while in others, placed, so far as we are aware, in exactly similar circumstances, erosion of all the tissues will not yet have been accomplished; the pink coloration surrounding the abrasion has now disappeared, and in its stead, around the opening, whose edges are irregular and flabby, the abraded mucous tissue presents *a bluish white and transparent aspect,* the surface of which is covered, when examined with the microscope, with little, smooth, shining eminences; this bluish white, shining appearance is owing to the muscular coat being visible through the submucous cellular tissue.

M. Louis, in his observations, "du Ramollissement, avec Amincissement, et de la Destruction de la Membrane muqueuse de l'Estomac,"* in the year 1824, presented to the attention of the Royal Academy of Medicine an affection of the stomach, which he believed had never been before described; he connects the affection which he describes with certain gastric symptoms, by the occurrence of which he seems to conceive that this peculiar gastric affection can, during life, be readily recognized. He minutely details the history and symptoms of twelve cases, as illustrative of the affection he treats of, most of which entered the hospital, as he also states, labouring under phthisis. Now although each or all of the symptoms which he connects with the softening and thinning of the mucous membrane of the stomach, which are anorexia, nausea, vomitings, and epigastric pains, may be present in a case during life, and yet no evidence of the change which he alludes to be observed on dissection after death; nevertheless, we conceive M. Louis to be warranted in setting forth these symptoms as sometimes consequent

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* Archives Generales de Medicine, Tome 5, page 1.

upon peculiar morbid conditions of the stomach, the effect of which, viz. the softening and thinning of the mucous membrane of the stomach, may be caused by the action of the gastric juice during life, (though this solution he does not admit,) owing to *diminished nervous energy.*

M. Louis does not stand single in his opinion concerning this affection; the late Professor Chaussier also conceived that this lesion was owing to the morbid action in the tissues of the stomach, developed during life. Cruveilhier, also, when considering the gelatiniform disorganization found to exist in the mucous membrane of the stomachs of children, is inclined to associate it with well-marked symptoms during life, by which it may be recognized; and Dr. John Gairdner, in the year 1825, drew the attention of the medical public to this species of softening and erosion of the coats of the stomach, as occurring in children who have been weaned,* and agrees with M. Cruveilhier in conceiving, that sufficient evidence may be presented during life to lead to a suspicion of its existence; he does not, however, go the length of saying that these symptoms are evidences of the erosion at *the time* existing, but simply that from their manifestation he could prognosticate they would be found upon dissection; in other words, he conceives that these symptoms are evidence of some morbid condition of the stomach, which, proving fatal to the patient, renders the coats of the stomach more susceptible of the solvent agency of the gastric juice after death, so that, materially, he does not differ much from Hunter.

M. Cruveilhier again, (so far as we understand,) also admits the agency of the gastric juice in some cases, but contends for a true "ramollisement gelatiniforme," which he conceives few are aware of, and in which, during life, certain symptom are exhibited. Jaeger of Germany attributed this softening to

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* First vol. of Edinburgh Medico-Chirurgical Society's Transactions.

a paralyzed state of the stomach, on account of which the gastric acid produced the appearance in question. Dr. Imlach, in a paper of his entitled, " Observations and Experiments on Softening, Erosion, and Perforation of the Stomach,"* a paper in which much valuable matter, relative to the post-mortem agency of the gastric juice, is contained, seems, from what we are able to gather, as the import of his meaning, to doubt the reality of a true softening taking place as a *vital process,* and seems rather inclined to ascribe recorded instances of the same as practical illustrations of his own views ; for this purpose, Dr. Imlach appeals to sentiments expressed by M. Louis, in his " Recherches sur l'Affection Typhoide," as evincing evidence of his being convinced that the views previously entertained by him were erroneous; the quotation is too lengthy to transcribe in full, but he ends by asking, " if the ramollissement of the stomach, and the perforation which is sometimes the consequence of it, may not be, in fact, as this honourable and talented physician (Dr. Carswell) has said, the product of a chemical action in the great majority of cases." There cannot be a doubt, we think, but that some of the cases brought forward by M. Louis were pure instances of a post-mortem agency of the gastric juice; and we do think that the expressions now quoted were mere acknowledgments of the same, not in the least invalidating the likelihood (either in M. Louis' own opinion or in downright point of fact) of a softening and erosion taking place during life, owing to a *diminished nervous energy.*

It would be foreign to our object to go into greater length relative to the consideration of this question ; as it is, we cannot help alluding to the opinions of Dr. Camerer, as contained in a thesis maintained in Germany, before Professor Autenrieth, (Stuttgard, 1818,) which we have not, however, had an opportunity of consulting. He, acting upon the assertion of Jaegar, with regard to the softening being the

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* Vol. 47 of Edinburgh Medical and Surgical Journal.

result of paralysis of the parietes of the stomach, determined to put it to the test of experiment. "A fluid collected in the stomachs of two children that had died of a gelatiniform softening of the viscus was introduced in the dose of a drachm into the stomach of a man, not long dead, which was then kept for twelve hours in a moist heat of 20° R. (77° F.); at the end of that period the membranes of the stomach were found dissolved through to the peritoneum, wherever the fluid had been in contact with them. The same fluid was introduced into the stomach of a living rabbit without producing any bad effect, and on the animal being killed its stomach was found in the most healthy condition; on the contrary, another portion of the *same fluid* having been deposited in the stomach of the rabbit after death, its parietes exhibited a pultaceous softening after a certain period; now, if during life the nerves distributed to the stomach from the pneumo-gastric and trisplanchnic be cut on each side, and the same fluid be *then* introduced into the stomach of the animals thus treated, *their stomachs soften*, but this effect does not ensue if the nerves be cut without applying the fluid."*

This experiment, if correct, goes certainly to prove the doctrine of Jaeger, viz., that the lesion may be induced in a *living organ* if it but become paralysed. Dr. Imlach says, "In the few attempts Dr. Simpson and I made upon cats and rabbits, to repeat the experiments of Dr. Camerer, by cutting the par vagum in the neck, we have as yet been unsuccessful in procuring his results.† If Dr. Imlach confined himself to the simple cutting of the par vagum (as expressed by himself) we do not so much wonder at the discrepancy of the result; Dr. Camerer not only cut the par vagum of each side but also the trisplanchnic branches of the sympathetic; hence, it is easy to conceive how his result might readily differ from that of Dr. Imlach. In

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* Townsend's Translation of Andral's Pathological Anatomy, page 103.

† Op. cit.

imitation of the example of Dr. Camerer we cut the pneumogastric and sympathetic nerves of a rabbit on both sides, immediately after which a loud tracheal rale was manifested, with great disturbance of respiration; the animal died convulsed in a few hours afterwards; upon examination about six hours after death *the whole of the* mucous membrane of the stomach was in a state of pulp, so as readily to permit the handle of the scalpel to pass beneath it and raise it up; in one spot, corresponding to the point of contact of the gall bladder, we had reason to suspect a thinning of the other tissues.

In another rabbit, killed by means of a stroke upon the back of the neck, and examined about six hours afterwards, no trace of this softened state of the mucous membrane could be detected. Are we warranted in drawing any inference as to the agency which the cutting of these nerves might have in effecting the result now stated? It might be a coincidence, so that we throw it out merely as a hint which others who have time to pursue this interesting subject may improve upon. It will be observed, that the result of this experiment not only differs from the experience of Dr. Imlach but also that of Dr. Camerer, in so far as in our case the simple section of the nerves was employed without the introduction of any other substance whatever into the stomach; whilst Dr. Camerer, in addition to this, introduced part of the fluids, taken from the stomachs of two children who had died of gelatiniform softening, into the stomachs of the animals upon which he had experimented; our own opinion then is, in addition to the stomach undergoing softening and perforation, as the pure result of the post-mortem agency of the gastric juice, (as beautifully proved by the experiments of Dr. Carswell,) softening of this viscus also takes place, if not as a *vital process*, at least owing to a morbid condition of its parietes, on account of a *diminished nervous energy*, by means of which it is rendered more susceptible of the influence of the gastric juice after death.

In the course of the inquiry of Allan Burns of Glasgow

and Dr. Carswell, it was distinctly proved, that not only does the gastric juice erode and perforate the coats of the stomach, but also acts upon the neighbouring organs, as the *liver*, *spleen*, and *diaphragm*. During the experiments which we were led to attempt, in illustration of the doctrines of Hunter and his followers, a circumstance presented itself to our notice, which, in our opinion, may account (on other principles than are at the present time generally recognized) for some peculiar appearances which the spleen presents. We shall here detail what we allude to:

The majority of the stomachs which we selected for experiments belonged to swine; upon one occasion we received a stomach of a very large size, immediately after the animal to which it belonged had been killed; the animal had evidently partaken of a hearty meal shortly before death, as its stomach was remarkably full of food, and in addition, was distended with a considerable quantity of gas; this stomach we suspended for the purpose of examining into the character of the perforation which results from the agency of the gastric juice; in about ten hours afterwards we were surprised to find the serous membrane to present a bluish white aspect, bedewed on its surface with moisture; in two or three hours more drops of clear fluid were observed exuding through the pores of the parietes of the stomach, and as it collected, dropped on the floor; this it continued to do so long as the parietes were entire, which was the case for seven days in a temperature of 62° F. The fluid was evidently of the same nature as the gastric fluids; now from this simple phenomenon a hint is given upon which we may build the superstructure of a very plausible hypothesis.*

Owing to the darkness and mystery which envelopes the true nature of the function of the *spleen*, as an organ, consi-

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* We shall be glad to learn that what in our ignorance we are going to advance is already known, although we have not been able to meet with any notice of it in the works which we have perused.

derable difficulty no doubt attends a description of the pathological changes to which it is liable; it has, however, long been observed to be the seat of very peculiar changes with regard to consistency of texture, and these variations, from its normal state and appearance, have hitherto been ascribed to the agency of some vital process; by some it has been conceived to be the result of a vitiated state in the quality of the blood which circulates through it; and by others, the softening of this organ has been regarded as the direct consequence of inflammatory action. Looking at the peculiar texture which enters into the formation of the spleen, it is but reasonable to admit that both of these causes may produce a softening of this organ, nevertheless we are inclined to conceive that a third agent may effect the same change.

From what we have above related it is very evident, that in some instances it is not essentially necessary that an opening or perforation should exist in the stomach after death, in order to admit of the escape of the gastric acid; for in the case which we have cited no such state of matters existed; now, such being the fact, as we have most indisputably proved, it requires no great straining of the imaginative powers to perceive how this acid may exert an influence on the spleen; its peculiar locality in relation to the stomach, particularly renders it the *most likely organ* in the abdomen to suffer from this cause. In those cases where the softening of the spleen has been observed, it is not wonderful that a reference should not have been made to the gastric acid towards explaining the phenomenon in question, for observing the parietes of the stomach, in their seemingly normal condition, the idea of regarding this softening as in some instances alone *pseudo-morbid,* or post-mortem, might not readily suggest itself. If, as we believe, it is generally admitted, that in the cases cited by Burns and others, the liver and spleen were affected, surely it is not difficult to suppose, that provided the gastric juice exudes through the walls of the stomach, without producing apparent lesion, the

same change may take place; this much we know, that if a portion or the whole of a spleen be introduced into a vessel containing the gastric fluid as extracted from the stomach of an animal recently dead, its texture will in a very short space of time exhibit indubitable evidence of having undergone softening; in the mean time, as we have not instituted experiments for the purpose of proving whether or not this change may be effected upon the spleen as it remains within the body, and in juxta-position with the stomach, we leave it to others to determine the question. How far the agency of the gastric juice may be concerned in determining certain changes in the consistency of the spleen, (the stomach yet being entire,) the causes of which are at the present time but ill understood; there cannot be a doubt, but that inflammatory action in the substance of this organ may prove a sufficient cause for imparting a degree of softening to it. And though we even go the length of subscribing to the possibility of inflammation sometimes going on in a latent form, without manifesting, during life, symptoms commensurate with its severity, still we doubt much whether inflammation can be regarded in the light of *cause* to the *effect* of softening, in the majority of individuals who, during life, had exhibited no evidence of organic lesion, consequent to inflammatory action having being going on, and in whom, beyond the mere fact of softening, no other product of *active congestion* can be distinguished.

And now that we have closed a very imperfect history of this highly important subject, we have to remark, (as we did at the very outset,) that it was with no intention of offering much that was new, that we were induced at all to interfere with it; the subject which has a more direct reference to what we principally intend to discuss, viz., the simple appearance of the tissues surrounding a perforation caused by the gastric juice, although necessarily mentioned in a superficial manner in the detail which we have endeavoured to give of this peculiar lesion, yet remains to be examined in connexion and compa-

rison, with those presented in the stomach. The result of very different causes, as the history of the agency of the gastric juice, could not well be disjoined or separated from a consideration of the appearances of perforation caused by it; we offer this as the sole apology for having taken up so much time in the detail of it.

(*To be continued.*)

ART. VII.—*Clinical Report of Sir Patrick Dun's Hospital.* By CHARLES LENDRICK, M. D., T. C. D., Queen's Professor of the Practice of Medicine, &c.

SIR PATRICK DUN'S HOSPITAL was established by Act of Parliament, 40th George the Third, for the special purpose of "*Clinical Lectures;*"* and I believe is the only institution in the kingdom thus appropriated. The funds amount to between two and three thousand a-year; and, except a small proportion, are derived from estates beqeathed for the maintenance of the School of Physic, by Sir Patrick Dun, M. D., formerly President of the College of Physicians.

According to the Act, thirty patients are selected from among the most important cases in the hospital, and are placed, for the purpose of clinical instruction, under the charge of one of the University or King's (Queen's) Medical Professors. The patients are treated in the clinical wards, rather according to the system adopted in private practice, than that usually pursued in eleemosynary institutions; and it is probable, that the superintendents, in thus carrying out the objects of clinical instruction, have directed the distribution of the funds in the mode best calculated to prove beneficial for charitable purposes.

It is a common error to estimate the benefits derived from medical charitable institutions, by the number of patients loosely entered on the books as admitted, cured, &c., without reference

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* See Irish Statutes at large, chap. 84, particularly clauses 4, 9, 10, 11, 12, 32 and 35.

to the circumstance, as to whether the cases were such as to really require such outlay of money; or whether the same amount of expenditure might not have been better incurred in affording relief, under more urgent circumstances, to other, although a smaller number of patients. For instance, cases often occur where apoplexy can be warded off by *genuine* James's powder, exhibited in the manner directed by Dr. Cheyne, in the Dublin Hospital Reports, and probably the object could not be effected by any other means. Cases of typhus fever, also, are occasionally saved by the administration of musk. Both these modes of treatment are conducted at considerable expense; yet suppose that by such means two lives are saved, otherwise about to be lost, at an expense of a few guineas; is not this expenditure more conformable with the objects of *real* charity, than the drugging a number of patients with those cheap, coarse, and often superfluous medicines, which the governors of some of our institutions, in their wisdom, specify as the only means to be placed within the reach of the medical attendant.

It is not exaggeration to say, that much the larger quantity of medicine consumed is actually wasted: thus it is that our practice has became the ridicule of our continental neighbours. In the United Kingdom the main object seems to be, to consume an immense quantity of cheap medicines, without reference to the quality of the ingredients or the mode of preparation. While the very inches of a malt vat, or the gallons of a still are specified in Acts of Parliament, any one may prepare and sell at discretion, by *wholesale,* adulterated medicine, or even poison, (except arsenic,) and this for the supply of "the trade." The retailers, however, are under some degree of legalized restriction, although in practice almost a useless one.

It would be well that the public could be convinced that the quality of medicine is of more importance than its cheapness, and that they would be better off than at present, and on the same terms as to expense, by consuming one-fourth of the

quantity of drugs, at four times the cost of each. How can medicine be directed with precision, where one specimen of scammony in the market is double the strength of another, or where (see Gulley's Translation of Magendie) *prussic acid* is sold in *London*, varying as four to one in its poisonous principle? The legislature which permits these, and many other inaccuracies and abuses, striking directly at the health and lives of the public, considers it necessary to specify the *precise* strength at which whiskey is to be imported from Ireland into England.

This digression on the state of the British drug market, and the want of proper legislation with respect to it, will probably not appear irrelevant to the reader, as shewing the nature of a system, but too much followed up in many of our charitable institutions. The object of these ought to be to supply to the poor what they most stand in need of; not those cheap modes of alleviating their miseries, which, if required, are comparatively within their reach; but the more expensive remedies, which, however indispensable for recovery from dangerous diseases, are not available, except from charitable sources. Provided reasonable economy be attended to, the *best* medicine, and the most liberal system of hospital management as to dietary, &c., will be found the most beneficial disposition of public charity. Thus, viewing Sir Patrick Dun's Hospital merely in its *secondary* capacity, as an eleemosynary institution, it may well afford a pattern to most of the national establishments.* In the latter, over-dosing with cheap medicine, and over-feeding with coarse articles of diet, often supersede a more beneficial appropriation of funds intended for the relief of the *sick*.

In referring to the practice of the hospital during the time of my recent attendance in the clinical wards, from the first of November last, it is merely my object to consider, succinctly, the

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* I have always experienced the utmost liberality on the part of the Governors of *Mercer's Hospital*, in entering into the views of the medical attendants.

leading practical points connected with some of the most interesting cases under treatment. It is neither my intention to detail the cases at large, nor the particulars of each. The records were kept in the case-book, during the time of my attendance, by Mr. Augustus Shelton, and Mr. George O'Connor,* two intelligent and attentive pupils, who displayed much skill and humanity in affording their services to the patients.

ARTICULAR DISEASE WITH DIFFUSED INFLAMMATION.†

A woman named M'Donnell, about 60 years of age, was admitted into the hospital, suffering acute pain from an abscess at the left outer ankle, just below the end of the fibula. The skin was tense, livid, and fluctuating. From the swollen appearance of the ankle, and a semi-luxation of the foot forwards, I was apprehensive of disease of the joint. The foot was tumefied, œdematous, and exquisitely painful.

A considerable quantity of pus was discharged from the abscess by an incision, and the part was treated, in the usual way, with poultices, &c. She had suffered from the disease for some weeks before admission, and referred it to the friction of a tight shoe on her heel.

As the patient had been much reduced by her sufferings, nourishment was liberally afforded. She still laboured under pain in the foot, although the agony which she sustained before being received into the hospital was much mitigated. She complained also of pain in both knees, which were swelled. The discharge from the incision was considerable, but of an unhealthy character. After a few days the symptomatic fever became typhoid; the patient's strength sunk, and she fell into a state of low dilirium with coma. Death took place on the 23rd of December.

I anticipated something unfortunate in this case, from the

* Both these young gentlemen have been attacked by fever, probably contracted in the performance of their clinical duties. They are, however, now (January 30) convalescent.

† The articles are arranged *alphabetically*.

peculiar appearance of the *countenance*. I am satisfied that if the study of physiognomy during illness were more cultivated, it would prove one of our best modes of forming both diagnosis and prognosis; at least, I have often found it so.

On post-mortem examination, the body was found to be much emaciated, without any swelling except at the ankle, foot, and knees. The ends of the tibia and fibula, and the astragalus, at the ankle joint, were completely carious. An abscess had formed between the bones and the tendo Achillis; and this, as well as the cavity of the joint, communicated by means of sinus with the external abscess which had been opened. The opposite knee joint contained purulent fluid, and the cartilages were nearly destroyed by ulceration. The adjacent knee joint was not examined, but from its external appearance a similar state might be inferred.

The liver was remarkably large, and the heart unusually small. There was little appearance of disease in the brain, except that the choroid plexus were congested and covered with purulent fluid. (What connexion had this with the state of coma?) None of the veins that were examined presented any traces of disease.

Post-mortem examination sometimes affords the melancholy satisfaction of establishing that nothing could have been done for the patient. In the present case it proved, that more extensive incisions (for which there seemed to be some indication) would only have uselessly increased the existing agony. Amputation, in the collapsed state of the constitutional powers, was out of the question, for the patient would have died on the table; nor would it have checked the progress of the disease, which seemed to have attacked the knees before admission into the hospital. Mercury was tried, but relinquished, as it caused vomiting and purging.

In the case of a woman named M'Keon, who was admitted on the 21st of November, and died on the 27th, a purulent collection was found in the knee joint. The left pleura was filled with pus, and the lung was also infiltrated with this fluid. The

early symptoms (as often happens in the worst cases of diffuse inflammation) were those of ordinary typhus fever, without any local affection. A swelling afterwards appeared on the left wrist, and presented a livid hue and boggy feel, (this corresponded with a sloughy state of the cellular tissue found after death.) The *opposite* knee subsequently became affected. The patient had formerly suffered from pulmonary disease, the tendency to which, of course, extinguished the little hope of recovery that might otherwise have been formed. She suffered, during the attack, from cough and pain of the side: and stethoscopic examination enabled the state of the lung and pleural cavity to be prognosticated.

DIABETES INSIPIDUS.

A patient named Kinchela had been under my care, four years ago, at Sir Patrick Dun's Hospital, for an anomalous affection of the urinary organs; no disease, however, could be discovered. On minute examination, a slight irregularity, with tenderness, of the spinal column, just at the junction of the dorsal and lumbar vertebræ, was ascertained. Two caustic issues were applied here; the urinary symptoms subsided, and the patient left the hospital, seemingly in perfect health.

In this state he continued till November, 1840, when he was again admitted into the hospital with dyspeptic symptoms, loss of flesh and appetite, and an increased secretion of limpid urine, which amounted to three quarts in the course of the night. He suffered from intense thirst. There were not any symptoms of spinal affection; and nothing remarkable was observed on analysis of the urine. Opium, phosphates, tonics, generous diet, and the medicines usually resorted to in such cases, proved aggravatory of the disease, by increasing the dyspeptic symptoms, or producing irritation of the bowels, without any alleviation in other respects. The most decided advantage was, however, experienced from laying aside medicines altogether. Under this negative treatment he improved, and continued to do so during the time of my attendance at the hospital.

It has long been my opinion, that the efficacy of treatment, in many chronic cases of disease, is misunderstood; and I have ventured to broach a theory which I think is confirmed by several facts, while it proposes the advantage of accounting for some extraordinary occurrences, and I allude to the operation of medicine, in saturating the constitution; and not only not relieving, but aggravating disease *during* its exhibition; although, on its administration being relinquished, the beneficial effects begin to appear. That this takes place, with respect to the administration of mercury, in venereal and some other diseases, is unquestionable. I think the principle may be extended to numerous medicines, and cases. That the disease does not subside *spontaneously*, is proved by the circumstance, that, while formerly left to the efforts of nature, it became aggravated. That medicine generally succeeds better, in chronic diseases, by being occasionally laid aside and resumed, than by continued perseverance in its use, is a fact well known.

If this principle, that remedial treatment sometimes develops its effects slowly and subsequently to, instead of during a course of medicine, should be established by further experience, many difficulties connected with medical practice will be accounted for. We shall cease to be surprised, that after the efforts of experienced physicians have disappointed expectation, some empirical practitioner or inert medicine should *seem* to effect the cure; and many of the feats accomplished by homœopathists, or attributed to imagination, may thus admit of solution.

The establishment of such a principle may, however, lead to more important practical results than the solution of obscure phenomena, or the reconcilement of anomalies. The practitioner will learn to administer medicine with a sparing hand, to allow time for the development of its effects, and not to be discouraged, because his treatment is not *as yet* effectual. It is, no doubt, very difficult to persuade patients that the reparative efforts of nature, aided by regimen, and perhaps by the ope-

ration of medicine formerly used, are more capable of effecting a cure, than relays of drugs daily administered. By the latter practice, an artificial state of the constitutional powers may be set up, and till it has subsided it is impossible to judge, either as to the natural course of disease, or the real influence of the remedial agents that have been had recourse to.

DYSPEPSIA.

Dyspeptic affections, whether existing alone or as connected with other diseases, are, of course, frequently under treatment in Sir Patrick Dun's Hospital. The doctrines of Broussais have made a most salutary revolution in the treatment of these complaints, by proving the injurious consequences of an indiscriminate use of stimulants and tonics; and the necessity, in many cases, of pursuing an opposite course, by means of abstinence, both from strong food and medicine, aided by the use of local blood-letting. Our continental neighbours animadvert, and with justice, on the uniformity of British practice in dyspeptic affections, by means of purgatives, mercury, and tonics.

I have no doubt, that the system of dietary commonly used in hospitals (and in some invariably so) is much calculated to engender dyspeptic affections, and to convert patients labouring under acute diseases, either into chronic boarders on the establishment, or the future inmates of some similar institution.

The due regulation of diet is one of the nicest matters requiring the physician's attention. An apothecary, himself an invalid, told me he always found, in chronic diseases, the services of the cook to be more important than his own; and the celebrated Ude was in the habit of remarking, that *his* superiority to *all* other artists, was shewn nowhere so decisively as in the sick room. In hospital practice, of course, there is not the same opportunity for shewing off the cook's art; yet, there are many points to be attended to, even here. The proper preparation of whey, flummery, and soup, so as to be palatable, and free from

all grossness, grease, &c., (vegetables, meal, and spices, or any other strong flavour, are to be avoided); and the keeping and dressing of coarse meat, on a large scale, so as to be tender and digestible, require both skill and attention in the department of hospital *cuisine;* and no establishment is properly conducted where these matters are neglected. Bad bread is a very prevalent source of injury in hospitals. As to potatoes, the patient who can use them with impunity is generally fit to leave the institution; and, as a general rule, they ought to be excluded from *sick* dietary.

EPIGASTRIC PULSATION.

Denis Shiel, a youth of eighteen years of age, was admitted into Sir Patrick Dun's Hospital, 30th December, labouring uuder cough and dyspnœa, with palpitations, especially on taking exercise. The chest sounded well on percussion; and this circumstance, with the distinctness of respiratory murmur, removed the supposition at first entertained, that the heart might have been displaced in consequence of pleuritic effusion. Pulsation was obvious to the sight and touch below the ensiform cartilage, while it was barely perceptible at the thorax. A distinct and circumscribed impulse was observable, as if the apex of the heart projected from behind the sternum, and protruded both the diaphragm and integuments before it. The force of the arterial circulation, and that of the heart within the thorax, as far as it could be determined, were very moderate. A whizzing sensation was felt by the hand, as well as heard, at the epigastrium.

Several cases of insidious aortic aneurism have made me (perhaps unreasonably) suspicious of its occurrence in doubtful thoracic diseases; time must, however, determine the nature of the above morbid affection. The disease had lasted, according to the patient's account, about four years.

The instances of epigastric pulsation, mentioned by Doctor Baillie, in the Transactions of the London College of Physi-

cians, were of a different nature from the preceding. Those occurred in the middle period of life, were unattended by dyspnœa, or the symptoms of cardiac disease, and the pulsation was diffused instead of being circumscribed.

FEVER.

There were not so many cases of fever as usual admitted into the hospital during the months of November and December. Only one of those in the clinical wards, that of an old woman labouring under irritative fever, proved fatal. Although the cases were highly instructive to the pupils, by illustrating the nature and treatment of this prevalent disease; there was not such novelty of character displayed as to render their detail worth the senior professional reader's perusal. The principles so well understood by the Dublin physicians, were rendered available, and these I have enumerated elsewhere.* The great point, never to interfere beyond what is absolutely *necessary*, was steadfastly kept in view; and the results were such as to give me no reason for dissatisfaction. Particular attention was paid to the first threatening of cerebral symptoms, and means were promptly adopted to relieve the head, without sinking the general strength; such as shaving the scalp, cold lotions, moderate local bleedings, counter-stimulus, and such an administration of mercury and antimony as, without acting injuriously otherwise, enabled us to rouse the action of these powerful remedies, on any symptoms occurring which denoted the approach of serious affection of the brain. The precaution, not to *over*do, was observed not only as to depletion, but with respect to the use of wine and stimulants. It seldom happened, that more than eight ounces of wine were administered during the day, and malt liquor was advantageously substituted in cases attended with excitement, or tendency to local inflammation. The value of musk was experienced in a case, (that of M'Donagh,) probably otherwise hopeless, where delirium tremens and typhus fever were united. The mania was followed by convulsive move-

* See Clinical Observations in the London Medical Gazette, March, 1839.

ments and collapse, with coma.* Musk, to do any good, must be of the very best quality; but care is taken, under the direction of Mr. Lloyd, resident apothecary, that all the medicine used at Sir Patrick Dun's hospital, whether purchased, or prepared in the establishment, is of this description.

MESMERISM.

Animal magnetism is by most of the medical profession considered to be an imposture. I am, however, convinced, that in some cases a nervous influence exists between operator and patient, at least at a few inches distance; this conclusion I formed from witnessing our hospital experiments made on the *male* patient, *behind*, and under circumstances that precluded any suspicion. The opinion that a nervous *aura* exists beyond the material structure of nerves, has been held by some of the first modern physiologists.†

Two objections are advanced to the reality of animal magnetism. The first, that it very frequently fails, does not disprove its occasional occurrence. The influence of contagion in producing fever, of wounds in causing tetanus, and of the bite of a mad dog in establishing hydrophobia, are generally admitted; and yet they all fail in producing their respective effects in a great majority of instances. The question in all such cases ought to be—are there *any* facts, however few, that cannot otherwise be accounted for?

Neither is the reality of what is called animal magnetism disproved by incredible and absurd stories as to its effects. Enthusiasm and imposture rather demonstrate exaggeration than falsehood; on the principle that spurious coin infers the existence of a genuine currency. Enthusiasm and imposture are,

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* The value of musk has just (January 30) been experienced in a case (that of Redmond) of malignant spotted fever, affecting five members of a family.

† "Il est donc vraisemblable què les extremités nerveuses sont entourées d'une *atmosphere*, an moyen de laquelle leur influence s'etend an delá de leur spheré materielle."—*Meckel, Anatomie Generale, (Traduit per Jourdan.)* 1825, p. 248.

after all, rare, unless there be *some* foundation to build on, or some truth to be corrupted.

Future investigations must determine the extent of the operation of animal magnetism, and how far it can be rendered a remedial agent. To assert, without examination of the facts, that the system *must* be false, is unworthy of men of science; the same mode of reasoning, if it deserve the name, might have been applied to most discoveries. I confess, however, that I have not had opportunity, either at Sir Patrick Dun's Hospital or elsewhere, of determining the question of animal magnetism further than that there is *something* in it.

MOXA.

The utility of moxæ, and the preference to be afforded to them rather than other modes of forming issues, were confirmed during my recent attendance at Sir Patrick Dun's Hospital. In a case, that of Flood, admitted November 15th, labouring under what is termed "morbus coxæ senilis," the effect of a severe fall, with shortening of the limb and infirmity; and in those of Mrs. Dolan and Mrs. Carolan suffering from obstinate sciatic neuralgia, the beneficial operation of moxa was especially remarkable. I have often tried the caustic issue in similar cases, but without equally beneficial results. There is something in the action of *fire*, of which farriers and other humble practitioners (of whom the learned might sometimes take a useful lesson) are fully aware.

Moxæ are applied at Sir Patrick Dun's Hospital by soaking the lint, of which they are formed, either in a saturated solution of *chromate* of potass, or in a solution of acetate of lead of the strength of about a drachm to the ounce of water; either of the solutions answers the purpose, and the opinions of the pupils were divided as to their relative advantages. The great point to be attended to is, to leave the moxa long enough on the part; this is determined, not only by the dark and shrivelled appearance of the skin surrounding the base of the moxa, but also by

the *diminution* of pain on the sensibility of the surface being destroyed by the full accomplishment of the burning process. A piece of lint, dipped in water of caustic ammonia, immediately applied, as recommended by Baron Larrey, much mitigates the pain consequent on the application of the moxa; I question whether, on the entire, the suffering is as great as that from a caustic issue; the benefit derived is generally so considerable, that however the application of the first moxa may be dreaded and objected to, that of the second is often practised at the solicitation of the patient.

I believe that moxæ and issues are too much neglected in *apprehended* phthisis, and other organic disease. Their preventive is, to say the least, as effectual in such cases as their curative operation.

NAUSEOUS MEDICINES.

At one time it was supposed that a medicine, to be effectual, must be disgusting, and this notion is still prevalent with the vulgar. Such improvements have, however, of late years been made in combining the avocations of the apothecary and confectioner, that there is scarcely a medicine in the pharmacopœia which cannot be exhibited in a palatable form, by some of the nice preparations which at present adorn our chemists' shops. I have for some time endeavoured to render medicine palatable without being inefficacious. This object is easily effected in the case of pectoral medicines, on account of the mucilaginous and syrupy ingredients which generally enter into their composition; as to others, the nauseous flavour may, in general, be much lessened by administering them in the state of *effervescence*.

During the present medical session I made several trials at Sir Patrick Dun's Hospital, with the above object. Astringent medicines in diarrhœa can scarcely be used in the state of effervescence, on account of the flatulence thus produced. The ordinary chalk mixture I have often found to disagree with the

stomach, and it does not seem to be of much efficacy, except in some cases, as a counteracter of acidity ; I accordingly substituted a mixture, formed of syrup of orange, tincture of kino, tincture of rhatany, and a small quantity of laudanum. This, which was sportively named by some of the pupils "syrupus mirabilis," was found very effectual in cases of diarrhœa ; and the patients declared it to be cordial and invigorating.

The producing the opposite state, that of purging, otherwise than by disagreeable means, is not at all so easy a matter. Most purgative medicines are very unpalatable ; or, if the concentrated principle, such as that of croton oil, scammony, elaterium, &c., be brought to bear, severe griping and sickness are produced, at least in some constitutions. I have administered croton oil successfully in many cases, not only by diffusing a minute quantity throughout purgative pills, but also by mixing it with spirit and mucilage, and exhibiting it in quarter drop doses, with milk, as directed by Dr. Conwell. On the entire I prefer, for general use, two aperient pills, administered every three or four hours, and, after each dose, a seidlitz draught: for the former any of the usual formulæ may be used, and I have found melampodium a very useful adjunct.* Where patients have a dislike to pills, senna mixture may be administered in effervescence. In hospital practice enemata afford ready means of effecting our object, after the failure of medicine given by the mouth. Although the prejudice against that description of remedy long impeded its use in private practice, except in case of downright necessity, it can now be so readily self-administered, or used by domestic means, that patients rarely object to it. In one hospital case, the necessity of using purgative medicine was considerably superseded by allowing the patient preserved tamarind pulp as a refreshment. Combinations of this, manna, honey, &c., are frequently used in nursery

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* This is a frequent ingredient in quack pills. Science may sometimes take a useful hint from quackery.

practice. There is no doubt that many palatable drinks (like the French ptisans) might be made to answer the two-fold purpose of beverage, and of aperient medicine.

OPHTHALMIA.

In the case of a patient named M'Donagh, a trial was given to the non-mercurial plan of treating iritis. The patient had used mercury for an attack of pneumonia, and laboured also under secondary venereal symptoms. He was in a state of salivation, from mercury, on his admission into Sir Patrick Dun's Hospital. Violent pain in the head, intolerance of light, and chemosis, accompanied the disease. The pupil, of the left eye especially, was irregular from adhesion of the iris to the lens.

The progress of the disease seemed to be kept in check by bleeding; the application of belladonna to the eye; turpentine in doses to produce ardor urinæ; and hydriodate of potass, in the quantity of half a drachm daily. As the mercurial action *subsided*, a deposit of fibrine took place in the anterior chamber of the eye. Mercury was now re-administered, and all the symptoms ceased. The left pupil still, however, remained irregular and adherent. The patient laboured for some time under great debility and headach, apparently the result of mercury. These symptoms were removed by the use of sarsaparilla, and tonics.

This case afforded one of the numerous instances of mercury causing, or at least aggravating, a disease, and afterwards curing it. To have effected any thing but injury, by the use of mercury, on the patient's admission into hospital, would have been impracticable. Indeed, his constitution seemed to be already saturated with that medicine. The other means, however beneficial as to keeping the disease in check, certainly failed in going beyond a certain point in the way of cure; and the eradication of iritic inflammation was undoubtedly traceable to the second influence of mercury on the constitution.

Several cases of scrofulous ophthalmia were under treatment in the clinical wards of Sir Patrick Dun's Hospital, during the period of my attendance. They presented, however, nothing deserving of particular notice. Hydriodate of potass, with, in some cases, an alterative course of mercury internally, and the local application of nitrate of silver, the solution being of strength proportional to the small extent of its application, constituted the principal treatment.

OSSIFICATION OF THE AORTA.

—— Dempsey, aged abont 60 years, was admitted into Sir Patrick Dun's Hospital, 16th November, 1840, for an affection of the heart. He suffered from palpitations, and the strokes of the ventricle and auricle seemed to be almost simultaneous. The pulse at the right wrist was strong, but occasionally intermitting; that at the left scarcely perceptible. The lungs emitted a quite clear sound on percussion, but the respiratory murmur was very slight.

The patient's case was considered to be one of unusual interest* from the circumstance that he had undergone the operation for popliteal aneurism about eight years before, at the Richmond Hospital, where the left femoral artery was tied by the late Mr. M'Dowell. The pulsation in the groin, and that in the vessels of the *leg*, seemed to be similar to those in the other limb.

Worn out by cough and dyspnœa the patient gradually sunk. On dissection, the valves of the aorta, and the commencement of its tube were found completely ossified. The

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* Just at this time (November, 1840) the femoral artery was tied, at *Mercer's Hospital*, by Mr. Auchinleck. The patient was a man of great resolution, had previously perused surgical works on the subject, and viewed all the steps of the operation through a slit in the bandage with which his face was covered. He had no unfavourable symptom, and the ligature was detached on the 21st day. The pulsation in the aneurismal tumour had quite ceased, and it was converted into an indolent mass.

vessel below the arch was also converted into a cylinder of bone. The left subclavian artery was included in the ossification, but the arteria innominata, the arch of the aorta, and the rest of the arteries examined were healthy.

It is probable that, in this case, the difference of pulsation in the two wrists was attributable to a mechanical cause—impediment to the circulation in the left arm, produced by the ossification of its supplying vessels. The difference was not perceptible in the inferior extremities. Difference of pulsation at the right and left side of the body was long since remarked as a character of disease of the heart, and especially of ossification of its valves. I am inclined to concur in the opinion, that most of the phenomena of the arteries or veins observed during disease of the heart, are referrible to a *vital* action in these vessels; in some instances, dependent on morbid sympathy; in others, produced by an action compensatory of the diseased cardiac affection and its influence on the circulation.

There was no discoverable disease of the heart, except the state of the valves. The lungs were emphysematous. The left femoral artery was impervious at the site of the ligature, and also where aneurism had existed in the ham. The usual dilated appearance of anastomosing vessels was observable in the limb.

PROSTATIC DISEASE.

Thomas Doyle, aged 25, was admitted into the chronic male clinical ward, labouring under an affection of the chest, which, both from the symptoms and the physical signs, seemed to be of a phthisical tendency. It was found, however, that the most urgent part of his sufferings depended on an attack of hernia humoralis, the consequence of gonorrhœa. This was treated in the usual way, and with success. The prostate gland was felt, on examination, to have attained a size exceeding that of the fist, and to fill the rectum. Doctor Colles examined this patient, at my request, and concurred in viewing the case

as very extraordinary. Although thus tumefied, and exquisitely tender to the touch, the gland gradually resumed nearly the ordinary size, and lost its sensitiveness. Throughout the attack the patient had not a single symptom of prostatic disease. Indeed, but for an accidental circumstance, the affection might altogether have escaped notice. The urine and fæces were discharged without difficulty or annoyance. A flexible catheter (or a silver instrument, if guided by the finger in ano,) could readily be introduced into the bladder. The prostate gland remained swelled on the right side, at the time the patient left the hospital, 28th of December.

I once met with a case where suppuration in the prostate gland was not suspected till the abscess burst into the urethra, during the introduction of a catheter for retention of urine. The patient was about twenty years of age, and never had gonorrhœa. He recovered, but has had occasional dysuria, and a slight impediment is felt, near the neck of the bladder, to the introduction of the catheter. He formerly laboured under a phthisical tendency, but it seems to have subsided.

How far is swelled testicle, from gonorrhœa, connected with affections of the prostate gland, and can the translation of disease be attributed, occasionally, at least, to a morbid state of the parts at the neck of the bladder? That prostatic affections in young persons are more frequent than is generally supposed, we have the testimony of Laennec and Sir Charles Bell.*

The second of the above cases (in private practice) derived the most marked benefit from injecting the bladder; a mode of

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* "I have frequently found these (softened tubercles in the prostate gland) where no symptoms of them had existed during life."—Laennec; *Forbes' Translation*, 1829, p. 290.

"I mean the formation of abscess around the prostate gland, and vesiculæ seminales. I do not know a complaint more painful and exhausting than this, or one which we are more apt to mistake, or which it is more difficult to remove. How frequent and destructive the complaint is may appear from the specimens in my collection."—Sir C. Bell, *Diseases of the Urinary Organs*, 1820, p. 20.

treatment that I have found more successful (as I formerly mentioned in the Dublin Medical Journal for Septembər, 1839) than any other in such cases. In that of Doyle there was no indication for it, as there were not any irritative symptoms.

PHTHISIS PULMONALIS.

After the decease of a patient named M'Evoy, who died of phthisis, 15th December, the lungs were found in such a state of disorganization, from tubercles in their various stages, that it seemed surprizing how the function of respiration (which had been but little affected) could have been carried on; a communication between cavities in the upper and the inferior part of the right lung, corresponded to a sound heard there during life, which resembled metallic tinkling.

Fibro-cartilaginous deposits had taken place between the lobes of the lung. I have not observed these except in phthisical subjects, and adjacent to the serous membrane. Are such the structures into which, according to Laennec, phthisical cavities are occasionally converted? Cavities communicating with the bronchi sometimes exist at the surface of the lungs, and of all varieties, afford the most distinct physical signs. That during life the physical signs, as well as the symptoms of phthisis, disappear, indicating cicatrization, not merely of the parietes but of the bulk of previously existing cavities, is unquestionable. The investigation of the matter is very interesting, for it is certainly more beneficial to know the grades by which patients sometimes recover, than the precise form and steps of their progress to the grave.

A patient, named Fannin, aged about twenty years, was admitted into the hospital on the 12th of December, labouring under the symptoms of acute bronchitis; he had previously suffered from similar attacks. The chest did not present any remarkable sound on percussion, but an *irregular* mucous rattle was heard throughout. The inflammatory symptoms were

overcome by the usual treatment, but the dyspnœa became aggravated, with lividity of the countenancc. After considerable suffering death took place.

On dissection, both lungs presented a structure interspersed with tubercles and tubercular cavities. The pulmonary tissue was rendered emphysematous, and the bronchial tubes were full of muco-purulent fluid. In this case, the physical signs during life, in a considerable degree counteracted or confused each other. The indications of softened tubercles were obscured by the mucous sounds in the bronchi; and the clear percussive sound, usually heard in emphysema of the lungs, was counteracted by tubercular consolidation.

This union of acute bronchitis, with the two chronic affections, emphysema and phthisis, is not very common. A frequent cause of death occurs, however, especially in cold weather, from the supervention of acute bronchitis on mere emphysema of the lungs—a conjunction of disease readily, without the aid of auscultation, confounded with pneumonia; the diagnosis is the more important, as bleeding is in general scarcely admissible in the former affection.

Emphysema of the lungs, with bronchitis, sometimes occurs in habitual drunkards, and presents a very fatal complication, A patient, named White, died in the hospital, 29th December, the second day after admission, under these circumstances. On dissection, the traces of bronchitis and emphysema, with those of pleurisy and pneumonia, were found. The liver and spleen were tumefied and softened; the mucous membrane of the stomach and intestines was in a congested state, and pus was effused in one kidney. The disease seemed to be a kind of diffused inflammation affecting the thoracic and abdominal viscera; rapid sinking, with excitement and agitation resembling that of delirium tremens (there was, however, no delirium,) and dyspnœa, were prominent symptoms.

A patient named Burnes, formerly of intemperate habits, but for some time a member of the Teetotal Society, was ad-

mitted into Sir Patrick Dun's hospital on the 13th of January. He had been ill about a fortnight, and been treated in the usual way. The dyspnœa was intense, the respirations were fifty in a minute, and breathing was almost entirely performed by means of the abdominal muscles; he died within twenty-four hours after admission; respiration had been audible, and nearly equably so, throughout both sides of the thorax, with a slight muco-crepitating sound at the base of the right lung.

On dissection, both bronchial tubes were found in a state of high congestion, with purulent effusion; pus was discharged also from the divided extremities of their minute ramifications; the lungs, especially the right, were emphysematous, and contained small portions of carnified substance, resembling muscle in structure: I have not seen a similar degeneration in pulmonary tissue; a large concretion was found at the root of the right lung; the liver was somewhat enlarged, and gorged with blood.

SCARLATINA.

This, once the subject of mere nursery treatment, has become one of the most fatal maladies to which mankind of almost all ages are liable. It was prevalent lately in Dublin, and several lives fell a sacrifice to the disease. Some cases were admitted into Sir Patrick Dun's Hospital; and, what was remarkable, though the disease was undoubtedly referrible to the contagion of scarlatina, the cutaneous eruption was often absent, and the affection of the throat was the only characteristic symptom. This circumstance has confirmed an opinion I formerly expressed,* that we are to look for the essence of scarlatina and measles in the affection of the mucous membrane, and to view that of the skin as secondary and symptomatic.

One of the cases admitted into the hospital, that of Mrs. Connor, presented, however, a different and unusual appearance. The face was so florid, tumefied, and disfigured at the

* Elemeuts of the Practice of Medicine, note to page 181.

commencement of the disease that, I, at first, viewed the case as one of erysipelas; and had it not been that the attack was unquestionably attributable to the contagion of scarlatina, and that an efflorescence was diffused over the body, I might have continued in the error. The symptoms, except those connected with the skin, and an inflammation of the eyelids, were very mild, and subsided with but little treatment.

Another patient, Mrs. Dunnigan, was admitted from the same house, and apparently under the influence of the same contagion. The eruption was but slight, though the face was flushed; the patient was unable to swallow, breathed with difficulty, and complained of violent pain in the throat. On examination, this part presented a fiery and malignant appearance, and the left tonsil especially was the site of a most formidable ulceration. In such cases it is my practice, if I see the case sufficiently early, and before ulceration has made much progress, to destroy it completely with muriate of antimony. I have, however, observed, that even at a more advanced stage, the destruction of *a part* of the ulcerated surface with that powerful caustic, is of great efficacy. This was done in the present instance. The pain and subsequent inflammation were considerable, but were checked by emollient gargles, and the application of leeches to the *external* surface of the throat;* in twenty-four hours from the application of the caustic the patient was nearly free from all suffering, and rapidly recovered; the slough formed by the caustic was not detached for some days.

I am inclined to think, that this practice, though highly recommended, is not very prevalent. The genuine muriate of antimony, nearly colourless, *viscid* like syrup, and *heavy*, sp. gr. 2000, is to be had at very few chemists' establishments, (indeed I question if there are many ounces in Dublin,) and

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* I never apply leeches to the fauces. The operation is irksome to the patient, as well as difficult to him who performs it. Besides, a very troublesome and unmanageable hemorrhage is an occasional consequence.

yet those that have it complain that it is not in any demand; although malignant scarlatina, and other dangerous affections of the throat have been prevalent for many years. If muriate of antimony be *properly* prepared, so that the *maximum* of oxide of antimony is contained in the solution, it is by far the most effective and manageable caustic, (provided the part to which it is applied can be kept fully in view;) for the decomposition of the salt is indicated by a white deposit, and corresponds with the corrosive action of its acid. What is called "white butter of antimony," of the consistence of water, contains an excess of acid, and presents little superiority over common spirit of salt. The genuiness of the article is determined by the proportion of white oxide of antimony precipitated (without flocculence) on pouring a small portion into water; it amounts to one-half.

SYPHILIS.

Julia Duggan, aged 14, was admitted into Sir Patrick Dun's hospital, labouring under hectic symptoms, with nodes on the shins, and condylomata about the anus. She had previously been affected by an ulcer on the side of the *tongue*, and sore throat. On inquiry, it was ascertained that her mother, brother, and sister had laboured under precisely similar symptoms, and in the same *order*. The father of the family had been affected by syphilis, (it is supposed from the ordinary source,) with ulceration of the tongue. The *same spoon* had been used by all the members of the family.

Of course much care is requisite in investigating the circumstances connected with such cases, but no requisite means were neglected in the instances just alluded to. A boy of *thirteen* years of age applied a few days afterward, at the hospital, for relief from the effects of *primary* syphilis, contracted in the usual way. Such instances are very frequent in Dublin, among persons of both sexes, and present themselves, almost daily, at Mercer's Hospital; they arise not only from premature depravity,

but from the notion entertained by the lower classes in Ireland, that an adult is cured of the disease by propagating it to a person under puberty.

While the contagious character of secondary syphilis scarcely, I think, admits of a doubt; the disease thus generated does not appear to possess the obstinate, and often intractable, character of that produced by infection from a primary ulcer.

A handsome young woman, about 18 years of age, was admitted into the female clinical ward about a month ago, labouring under ozæna. She had the appearance and symptoms of tolerable health, but a stench, conveying but too clear intimation of disease of the bones of the nose, was perceptible. On examination the schneiderian membrane was observed to be tumefied and red, and ulceration was discoverable at the spongy bone and septum. Her father, I was informed, had been for many years an abandoned character, and fallen a victim to syphilis. There is no other venereal symptom, and her character is without reproach.

The prospect of preserving her from loathsome deformity must depend upon the small size of the diseased bone that may be detached. From a slight thickening of the periosteum of the ossa nasi which took place, but had subsided before admission, there is reason to apprehend the participation by them, or the ethmoid bone, in the disease. Mercury, I am afraid, would only increase the mischief. I tried sarsaparilla and hydriodate of potass internally, with the local application of nitrate of silver and fumigations. The latter are varied according to the result. The progress of the case must necessarily be tedious.

Cases like the preceding sometimes occur in private practice, and the medical attendant who could bring such to a fortunate issue might make his own terms and earn hundreds. What a scope for quackery, imposture, and mischief; what an opportunity for skilful management and conscientious dealing; yet

we still hear the cry for a further assortment of cheap practitioners for the *service* of the public.

In the above case the investigations were very carefully pursued, for the purpose of determining how far the disease was of syphilitic origin. That scrofula existed in the family is unquestionable; and, if the mother's account could be relied on, none of the other children (nor herself) had been affected by any venereal symptoms; on the other hand, she admitted that her husband had died "covered with sores," and that he had, at least before he was married, venereal symptoms; also, that her eldest child had been born dead, and prematurely.

I question much whether what is commonly termed "scrofula" differs, in some cases, from hereditary syphilis, especially where the disease shows a tendency to produce caries of the bones; and I think there is much reason for the opinion of the vulgar, that "the evil" is frequently the dregs of a venereal taint; in other words, that syphilis, particularly under the injurious operation of mercury, sometimes *makes* scrofula, instead of merely exciting a dormant predisposition.

TEETOTALISM.

A man named Keegan, about 40 years old, was admitted into Sir Patrick Dun's Hospital, labouring under symptoms resembling delirium tremens. He suffered lately from epileptic fits, and his state appeared to border on insanity. His illness had commenced some months since, shortly after relinquishing habits of intoxication, and joining the Teetotal Society. He displayed much incoherence during his sojourn in the hospital, and left it in a few days seemingly in a state of derangement.

The question seems to be undetermined, as to how far intemperate habits can safely be relinquished *at once*. The balance of evidence is certainly in favour of the attempt proving successful; although the above case, and that of Burns, with the reports of some of the continental lunatic asylums, might

lead to a contrary inference. I confess, however, I do not see the grounds on which the advocates of abstinence from strong liquors rush into the opposite extreme, and recommend the consumption of tea and coffee, articles which have nearly done as much to undermine the health of one sex, as the use of strong liquor has impaired the health of the other. Besides their own injurious effects, they lead to the baneful practice of opium eating. What objection have teetotalists to good table-beer, a home-made article, much more wholesome, and cheaper than tea or coffee?

I believe that the secret habit of opium eating, however destructive, prevents many attacks of delirium tremens that would otherwise take place. Undoubtedly, sudden changes are always precarious; and that irritability which follows on the relinquishment of a long-continued excitement by strong liquors, presents risk enough, without augmenting it, and depressing the nervous system further by the addition of tea and coffee to the ordinary dietary. As far as I have seen, the recently reclaimed drunkard, if a teetotalist, presents a worse constitution for the invasion of disease than even during the height of his intemperate habits. What is the composition of the teetotal cordial?

ULCERATION OF THE LOWER BOWELS.

A distressing case, that of Boland, of ulceration of the rectum was admitted into the hospital early in November. The patient had been under treatment at Stevens' and other hospitals for a considerable time. The intestine was often forcibly protruded with great pain, and to a large extent, through the anus, which became dilated so as to admit three fingers; on examination with a speculum, the surface of the bowel was found to be fungous and ulcerated, and blood was discharged; the sigmoid flexure of the colon was also felt, through the abdominal parietes, to be thickened and indurated. Every constitutional and local remedy or mode of alleviation that could be

thought of was tried in vain, both at Sir Patrick Dun's Hospital and elsewhere.

The contact of any instrument with the ulcerated surface caused intolerable pain. The attempt was, however, made to introduce into the rectum the vapour of frankincense and strammonium, by means of the apparatus for injecting tobacco smoke. This application was found to give more decided relief than any plan that had been tried. The ingredients were converted into vapour by being placed, together with ignited charcoal, in the case attached to the bellows of the machine.*

The patient, besides suffering great local agony, underwent much distress from symptoms of dyspepsia, dependent on difficulty of evacuating the bowels; and habitual costiveness was the result of restraint during the act. What was extraordinary, the patient, about thirty years of age, had every appearance of health in her countenance, and presented a state of *en bon point;* she had never been married.

The healthy appearance of the woman and the presence of dyspeptic symptoms had, perhaps, led the medical attendant originally consulted astray as to the real nature of the disease, which was not suspected for some time. We cannot be too particular in our investigations; I have often had to regret my own neglect in putting sufficiently precise questions, or, the error of being satisfied with an account instead of examination of the case.

I have met with instances of fatal ulceration of the rectum, produced by the habitual use of aloetic or other irritating purgatives. Temporary relief from the inconvenience of a slow action of the bowels is dearly purchased at this cost.

It is almost needless to repeat, that in the preceding hasty

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* "There is nothing new under the sun." After writing the above remarks, I found the following passage in Baglivi, edition, A. D. 1700, p. 72:

"Inveteratis alvi fluxibus, dysenteriâ, tenesmo, *relaxatione ani*, &c., excipiatur *per inferiora vapor terebenthinæ* prunis ardentibus injectæ et sanabuntur."

sketch, I have not attempted a methodical statement of the cases in the clinical wards of Sir Patrick Dun's Hospital.* My object has been, as I have already explained, to cull from among the cases the most important points bearing on practice, and especially such as may seem to require further consideration, and discussion by my professional brethren. A considerable number of cases of acute and chronic disease presented themselves and were subjected to treatment; which, although interesting and useful to students, would only incumber pages intended principally for the perusal of the practitioner. I have, indeed, to apologize for so frequently diverging from facts to general comments. Without, however, some such proceeding, I do not know how we can render the past available for the future; or the knowledge of one case useful for the management of others, that, however apparently similar, and classed under the same denomination, present considerable variation.

Hatch-street, 30th January, 1841.

ART. VIII.—*Some Account of the Origin and early History of the College of Physicians in Ireland.* By AQUILLA SMITH, M.D., Fellow of the College of Physicians, M.R.I.A.

[Read at the College of Physicians on Monday, 18th January, 1841.]

OF the early history of medicine in Ireland very little is generally known, with the exception of such brief notices as the learned Sir James Ware, and his editor, Mr. Harris, have published in the "History of the Writers of Ireland."

Yet from that work little more can be learned than the titles of the medical books which were published in Ireland, or on the continent by Irishmen, many of whom had been driven from their native land by the circumstances of the times in which

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* The patient labouring under malignant spotted fever, already alluded to, died of a relapse on the 5th of February.

they lived, to seek a refuge in foreign countries, where some of them acquired great reputation, and obtained posts of high distinction.

About the middle of the sixteenth century, *Rowland Shorlooke*,* an Irishman, was physician to Mary, Queen of England; and the celebrated *Nellanus Glecanus* or *Neill O'Glacan*, a native of the county of Donegal, was physician and privy councillor to Lewis XIII., King of France, and Professor of Physic in the University of Toulouse, where he practised when the plague raged there, and in 1629 published a book, entitled, "Tractatus de Peste, seu brevis, facilis, et experta methodus curandi Pestem." He was afterwards Professor of Physic at Bologna, in Italy, at which place, in 1655, he published another work, entitled "Cursus Medicus," treating of physiology, pathology, and prognosis. He obtained great reputation in France and Italy, and probably died at Bologna, but in what year is uncertain.†

Bernard Connor, a native of Kerry, born in 1666, was also a very celebrated physician; he received the elements of education in his native county, and afterwards Studied Physic at Mountpelier and Paris; while at the latter university he was entrusted with the care of the sons of the Chancellor of Poland, and shortly afterwards travelled with them into Italy, and through Germany to Poland, where, at a very early age, he was appointed State Physician to John Sobieski, then king of that country. When he had been about a year in Poland, the king's daughter was married to the Elector of Bavaria, and he attended her to Brussels in 1694, as her physician. Shortly after he came over to England, and was admitted a Fellow of the College of Physicians in London, and a Member of the Royal Society, he was also a Member of the Academy of Paris. The

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* See "A brief Treatise touching the Preservation of the Eie Sight," 1586, p. 11. By Walter Bailey.

† "Ware's Writers of Ireland," Harris's edition, p. 141.

year following he spent some months at Oxford, where he published a volume of tracts; and during his stay at that university delivered lectures on anatomy and materia medica. Next year he passed the summer at Cambridge in making chemical and anatomical experiments, and the two following years he practised as a physician in London, where, in 1697, he published a curious book, entitled, "Evangelium Medici, seu Medicina Mystica," in which supernatural effects are philosophically compared with natural ones, and attempted to be explained by the principles of physic, though not considered within the reach of natural causes. This talented and distinguished physician died at London, in 1698, at the early age of thirty-two.*

These few instances are sufficient to establish the high estimation in which our countrymen were held both in England and on the continent.

My friend, Dr. Evory Kennedy, in his introductory address at the first meeting of the Obstetrical Society, instituted during his mastership of the Lying-in Hospital, in 1838, has given an interesting summary of the writings of our early medical authors; to which he has added a comprehensive view of the benefits conferred on society, and medical science, in more recent times, by our countrymen, so many of whom have distinguished themselves in the practice of midwifery.†

Sir Philip Crampton, in his lucid and erudite outline of the history of medicine in general, read at a meeting of the Royal College of Surgeons, in November, 1838, has also established the claims of Irish practitioners to several discoveries of great practical value, both in medicine and surgery.‡

I believe I have now alluded to the only attempts which have been made towards elucidating the history of medicine in this country; and it is much to be regretted that no Irish scholar has hitherto been induced to examine a few, at least, of the

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* "Ware's Writers of Ireland," Harris's edition, p. 258.

† "Dublin Journal of Medical Science," vol. xv., p. 160.

‡ "Dublin Journal of Medical Science," vol. xiv., p. 504.

numerous manuscripts on medical subjects, some of them very ancient, which are preserved in the libraries of Trinity College, and the Royal Irish Academy, as well as many others in private collections. For "in our medical books it will be found that our physicians had as much knowledge of the human frame, and as much skill in the treatment of disease as the physicians of any other nation at the same period."—*Preface to O'Reilly's Irish-English Dictionary.* 4to, 1817.

The history of medicine in Ireland still remains to be written, and, while I regret my incapacity for entering on this inviting and hitherto almost unexplored field of investigation, I shall content myself at present with endeavouring to rescue from oblivion some facts connected with the origin and early history of the College, of which I have the honour to be a member, and within whose precincts we are assembled.

This subject has not been even alluded to by any of the writers already mentioned, and scarcely a trace of its early history is to be found in the archives of the College.

The chief sources from which I derive my information are extracts which were collected by the late learned Dr. Barrett, from the documents preserved in the University of Dublin, and for the use of which I am indebted to my friend the Rev. Dr. Todd.

The College of Physicians in Ireland owes its foundation to Dr. John Stearne, Fellow of Trinity College, by whose influence and exertions the Provost and Senior Fellows were induced to assign a certain building "for the sole and proper use of physicians."

The building, which was appropriated for the use of the first President and Fraternity of Physicians in Dublin, as they were then styled, was called Trinity Hall; it was originally intended for a city bridewell, and was situated about midway between the College and the Castle; at least, such is the position laid down for it in the map of Dublin, published by Speed, in 1610; and although its name or situation does not

appear in the fine and curious map of this city, published in 1728, it may fairly be presumed that the exact spot on which it stood is at present occupied by the pile of buildings in the centre of Trinity-place, which probably has derived its name from the Hall, and which locality agrees very well with the situation of the bridewell in the ancient map of 1610.

As the history of this building appears to have been altogether unknown to the authors of the several histories of our metropolis, I may be excused for entering into some details concerning its origin, for the purpose of adding to our knowledge of the topography of Dublin, and more particularly on account of its being the original Hall of the fraternity of physicians.

On the 20th June, 1603, a petition was presented to the corporation of Dublin, praying for assistance to enable some well-disposed persons to have a bridewell or house of correction and labour, erected for the reception of the numerous vagrants, many of them able-bodied, who, resorting hither from the country, endangered the lives of the citizens, by introducing contagion.*

The names of the petitioners were, Doctor Lucas Chaloner, one of the original Fellows of Trinity College; Sir James Ware, the father of the distinguished historian and antiquary; Sir John King; and Sir James Carroll, who was Lord Mayor of Dublin in the years 1612, 1617, 1625, and 1634. The petition was approved of, and a deputation, consisting of the Mayor and three members of the corporation, was appointed to confer with the petitioners upon a plan for forwarding so desirable a work.

The result of the conference was, that a portion of Hoggin-green (now College-green) was vested in six trustees; three

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* An anticipation which was realized by the plague breaking out in October, 1604, and continuing its ravages during the three succeeding years. *Whitelaw and Walshe's, Dublin,* vol. i. p. 202.

nominated by the corporation, and three by the petitioners, on which ground was to be erected a bridewell, to be under the jurisdiction of the corporation.

And as the building was to be erected by the petitioners, at their own cost, a proviso was introduced, that if by any fault of the corporation the building should be converted to any other use than that of a bridewell, the property should then become vested in the trustees appointed by the petitioners, until such time as it should be re-established as a bridewell.

These conditions were agreed to by the corporation, on the 27th January, 1603, and it appears that the work was commenced shortly after; for in April, 1604, the corporation was petitioned to confirm the agreement, as some expense had already been incurred in the building.

The conditions were confirmed, and Doctor Chaloner, who was so active in promoting the undertaking, died in 1613, at which time the bridewell was not completed, and some litigation concerning it followed.

A person named George Breddam had been employed to build the bridewell, and having expended some money on it, he petitioned the Privy Council to be repaid the amount which he had advanced. On the 15th February, 1615, the matter was referred to two persons, to report thereon, and they recommended that forty pounds should be paid to Breddam, in full satisfaction of all his demands; he undertaking to deliver up the building in complete order, and so the matter rested until the first of September in the following year, when, on a re-hearing of the case, an order was issued, directing the Mayor of Dublin, on the part of the corporation, to take a review of the expenditure, and that the corporation should pay the amount so found to be due, within twenty days, to Breddam; or, in case they refused to do so, it was ordered that Sir John King and Sir James Carroll, knights, (two of the original petitioners,) should have the house called bridewell, on paying the amount found due, on the new inquiry.

The Mayor of Dublin and Sir James Ware were the referees on this occasion; and in October, 1616, they reported, that Breddam was satisfied to take thirty-two pounds English, in lieu of all his demands.

It appears that neither the corporation nor the trustees for the original petitioners were disposed to pay the costs of the building, and the end of it was, that on the 11th December, 1616, it was offered by the Lord Deputy to Trinity College for the sum of thirty pounds, which offer was accepted, and the corporation conveyed the ground on which the house was erected, to the College, on condition that it was to be converted into a College Hall or Free School, from which time it took the name of Trinity Hall, and was subsequently occupied by certain students of the College, until the breaking out of the civil war, during which the Hall was neglected; the College not being then in a condition to look after it, the consequence of which neglect was, that the corporation had thoughts of reassuming the Hall, because it was not employed for the purpose intended by them.

The College, having notice of the intention of the corporation, consulted how they could frustrate the design of depriving them of the Hall. It was proposed, that they should make a lease of the premises, but this plan was objected to by Doctor Stearne, on the grounds that making a lease of the premises would be more contrary to the intent of the conveyance by the corporation to the College than any former neglect on their part; and, consequently, would give greater advantage to the other party in prosecuting their design.

Doctor Stearne then proposed to the Provost and Fellows, that he should be constituted President of Trinity Hall, during his life, and be accommodated with lodgings therein upon certain conditions. The chief of which were, to keep out the corporation; to repair the Hall without any expense to the College; and to convert the remainder of so much of the house as should be allotted to him for his accommodation, to the sole and pro-

per use of physicians; and lastly, that the College should for ever have the power of nominating the President of Trinity Hall.

Upon the acceptance of this proposal, which was made about the year 1654, Doctor Stearne was appointed President, and expended above one hundred pounds on repairing the building, for the purpose of accommodating physicians with a convenient place to meet in, until the establishing of a College of Physicians could be accomplished. By this arrangement the design of the corporation was completely baffled, and the full intent and purpose of the original conveyance carried into effect.

I proceed now to what may properly be considered the history of the rise and progress of the College of Physicians, up to the date of the charter, under which they are at present incorporated.

The earliest document I can discover relating to the establishment of a College of Physicians in Ireland, is a letter from Charles the First to Lord Viscount Falkland, Deputy General in Ireland. This letter is dated at Westminster, 5th August, 1626. The preamble recites the zeal which the king's father "always had to reduce the kingdom of Ireland to civility, and to an uniform manner of government with the realm of England;" and continues, "we, therefore, in imitation of so royal an example, have now taken into our consideration, that the establishing and practice of learning and humane sciences is not a little available thereunto; and amongst others, that laudable and most necessary art of physic, the practice whereof, as we are informed, is daily abused in that our Kingdom by wandering, ignorant mountebanks and empyricks, who, for want of restraint, do much abound, to the daily impairing of the healths, and hazarding of the lives in general of our good subjects there. For the reformation of which abuse we think it fitt, upon your recommendation, and hereby doe require and authorize you with the advice of our learned council there, by letters patent to be

made and past from us, our heirs, and successors, under the great seal of that our realm. To erect in our city of Dublin, in that our Kingdom, a College, Society, and Corporation of Physicians, according to the rule and form of the charter heretofore granted to the physicians in our city of London, for the incorporating of them."

It also authorized the intended College to purchase lands, &c., not exceeding the yearly value of forty pounds Irish, and to make laws, &c., for the government of the Physicians practising in Dublin, or within twenty miles thereof.

This letter, it seems, was granted onthe recommendation of the Lord Deputy; and it is quite clear that the institution of a College of Physicians in Dublin was contemplated shortly after the incorporation of the London College, by James the First, in 1617.

Dr. Bedell, shortly after his appointment to the Provostship of Trinity College, in a letter to Archbishop Ussher, dated London, 1628, says, "At my being in Dublin, there came to me one Dr. De Laune, a physician bred in Immanuel College, (Cambridge,) who, in speech with me discovered their purpose to procure a patent, like to that which the College of Physicians hath in London." And in another letter, written from Hornsheath, April 15th, 1628, addressed to the same prelate, he writes, "I suppose it hath been an error all this while to neglect the faculties of law and physic, and attend only to the ordering of one poor college of divines."

Although it does not appear that any immediate benefit was derived by the physicians from the king's letter, still the intention of Provost Bedell to establish a faculty of physic in Trinity College was not lost sight of; and accordingly, in 1637, a Regius Professor of Physic was nominated. The general interruption to public business, which was caused by the breaking out of the civil war, created further delays; and the next and most important step yet taken towards the establishing a College

of Physicians in Ireland, was the appointment of Dr. John Stearne, about the year 1654, as President of Trinity Hall, which was at that time set apart "for the sole and proper use of physicians;" and thus the matter stood until the restoration of Charles the Second, on the 29th May, 1660.

A new Provost, Fellows, and Scholars were then appointed in Trinity College, and to them Dr. Stearne renewed his proposals on the 18th February, $166\frac{9}{1}$.

The chief terms of these propositions were:

That Trinity Hall and the ground attached to it, should be set apart in perpetuity, for the advancement of the study of physic in Ireland; and that Dr. Stearne should be constituted President of the Hall during his life, and have the privilege of residing on the premises or any other building which might hereafter be raised on the same ground.

That the President shall call into a fraternity able physicians, who, together with him, were to endeavour to raise funds for additional buildings, and to procure a charter of incorporation for the physicians.

That the nomination of the President of Trinity Hall should always remain with the Provost and Fellows of Trinity College.

And lastly, that the President and fraternity shall, if demanded, meet to consult upon the best means for the recovery of the Provost and Fellows, or their successors, whenever any of them shall happen to be sick.

These proposals were approved of by the Provost and Fellows; and a deed or instrument was ordered to be drawn up, binding each party to the performance of the conditions; it was executed on the 22nd of the same month, but was afterwards cancelled, from what cause does not appear, and was renewed and duly executed on the 22nd April following, and Dr. Stearne was thereby constituted President of Trinity Hall; and on the 3rd June, 1662, he was elected Public Professor of Medicine in Trinity College, during life, and was sworn into office by the Vice-Chancellor on the following day.

In the meantime the requisite measures were taken for effecting the incorporation of a College of Physicians in Dublin, and on the 8th of August, 1667, the physicians received their first charter from King Charles the Second.

The title of the new corporation was "The President and College of Physicians," which consisted of fourteen Fellows, including the President, Dr. Stearne, who was appointed to that office during his life. The second name in the list of Fellows is that of the celebrated Sir William Petty, who was also a Fellow of the College of Physicians in London.

The College had jurisdiction over the medical practitioners in Dublin, and within seven miles thereof, and no person without its license could practise medicine within these limits, under a penalty of five pounds for each offence.

The College was also authorized to have a common seal, and to sue and be sued in the name of the President, in any court of law in Ireland, and every clause was to be construed, as the charter expresses it, "in maximum advantagium" of the College.

They were empowered to acquire property to the value of £100 per annum; to meet as often as they chose; to make by-laws, and elect Fellows, subject to the approval of the Lord Lieutenant or his deputy.

The Provost, Fellows, and Scholars of Trinity College, provided they settled Trinity Hall and the lands appertaining to it, on the College of Physicians, were, after the death of Dr. Stearne, to have the privilege of nominating a President annually, which election was also subject to the approval of the Lord Lieutenant.

Immediately after the incorporation of the physicians, Trinity Hall was granted in trust to Matthew Barry and Lancelot Sandes, for the use of the College of Physicians. And, as one of the original articles had not been provided for in the charter, a new agreement wes entered into, by which the College of Physicians were bound "to meet and consult, without fees, upon

the best means for the recovery of the Provost and Fellows, and their successors, whenever they or any of them shall happen to be sick or diseased."

Dr. Stearne having fulfilled all the conditions required of him by the deed of 1661, the Board of Trinity College, on the 9th September, 1667, ordered to be entered on the registry, that Dr. Stearne had fully discharged the trust in him reposed.

He died shortly after. And before I proceed with the subsequent history of the College, I may be permitted to give a brief account of the learned and distinguished individual, to whom we owe so much, and whose claims on the gratitude of the medical profession have hitherto been almost unknown.

John Stearne was born at Ardbraccan, in the county of Meath, on the 26th November, 1624, in the house of his uncle, the celebrated Archbishop Ussher, at that time Bishop of Meath. On the 22nd May, 1639, in the fifteenth year of his age, he entered Trinity College, Dublin, of which, in 1654, he was a Fellow.* He was a Doctor of Medicine, and also of canon and civil law, and on the 24th November, 1656, he was elected the first Hebrew lecturer in Trinity College. He died on the 18th November, 1669, in the 45th year of his age, and was buried in the vaults of the College Chapel. A tablet was erected to his memory, it is still in good preservation, and may be seen affixed to the outer wall, near the entrance to the vaults, immediately over the monument of Provost Andrews; and although it bears record of his being "Collegii Medicorum Præses primus," his right to this distinction has been usually conferred on one of his successors.

Dr. Stearne was a man of profound learning, and the author of several works; from the subjects on which he wrote it would appear that he was more inclined to the study of divinity than to

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* Sir James Ware states, that the Doctor "was ejected by the usurpers."—*Writers of Ireland*, B. I., p. 159.

that of his own profession,* still it is certain that his medical practice was very considerable, for in 1655, at his own request, the Provost and Fellows did, "in consideration of Dr. Stearne's practice of physic, grant unto him full liberty to lye in the city of Dublin, or elsewhere, whenever, in his discretion, his physical employments shall require his absence any night from the College." And again, in 1661, the Board of Trinity College ordered, that on account of the remoteness of Trinity Hall from Trinity College, and Dr. Stearne's practice of physic, "he shall not be penally obliged to be present at College prayers, unless he be thereunto specially required; and that he receive his commons in money." Nor were these the only favours conferred on him, for, being a married man, he was granted a dispensation for holding his Fellowship, and other college preferments, notwithstanding the Statutes.

On the 27th January, $167\frac{0}{1}$, notice was given to Trinity College, that the Presidentship of the College of Physicians was vacant by their charter, and Sir Abraham Yarner, Knt., was appointed. Dr. Ralph Howard, Public Professor of Medicine, was elected in 1674, and in 1677 he was succeeded by Dr. Robert Waller, and in 1681 Dr. Patrick Dun was chosen President.

In 1687 a circumstance occurred, which for a short time created some dissension betwen Trinity College and the physicians. Dr. Connor and Dr. Dun waited on the Provost, and intimated that Dr. Crosby had been chosen President of the College of Physicians, and requested that the appointment might be confirmed.

It appears that in 1680 certain articles had been agreed to by the College and the physicians, whereby each party was bound, under a penalty of £300, to the performance of the con-

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* He was an ardent admirer of Hippocrates, of whose infallibility in medical matters he had not the smallest doubt, for in his work entitled "Animi Medela," p. 58, he speaks of him as one "qui nec fallere nec falli potuerat."

ditions mutually agreed on. By one of these articles Trinity College was obliged to confirm the nomination of a President by the College of Physicians, provided the person chosen was a Protestant of the Church of Ireland.

On this occasion, Dr. Crosby, who had been elected, was a Roman Catholic, and the confirmation of his appointment was refused by the Provost and Fellows. The physicians forthwith proposed that the agreement of 1680 should be cancelled, which offer was accepted, provided they would deliver up all the documents in their custody relating to Trinity Hall; and an offer was also made to make a lease of the Hall for forty years to the physicians, on such terms as might be agreed on.

On the 19th May, 1688, the physicians again sought for a reason why Trinity College refused to confirm the nomination of Dr. Crosby, and the same reply was given as on the former occasion.

It appears then that the College of Physicians was without a President from 1687 to October 18th, 1690, when Sir Patrick Dun was duly constitutcd President for the year following.

A few years' experience proved how insufficient the powers conferred by the charter were towards the checking of quackery and empiricism, the practice of which had greatly increased; with a view to put a stop to these evils, the physicians presented a petition to Lord Viscount Sydney, Lord Lieutenant of Ireland, praying that a new charter might be granted, similar to that of the London College, and also that they might have one of the forfeited houses for a College Hall, and five or six acres of ground in the vicinity of Dublin, for the purpose of establishing a physic garden.

The petition was referred to Sir John Temple, Attorney General for Ireland, to report his opinion thereon; and on the 3rd September, 1792, he recommended that it might be forwarded to their Majesties, and on the 29th of the same month Lord Sydney received the royal authority to have a new charter made out, with as little delay as possible after the surrender of the old one.

On the 14th December, 1692, the original charter was surrendered by Dr. Duncan Cumyng to the Lord Chancellor, and on the 23rd June, in the following year, the College of Physicians received the new charter, and thereby acquired more extended privileges than they enjoyed before.

This charter, together with subsequent Acts of parliament, are the authorities under which the College is at present constituted; and as these documents are published, and the records of the College are complete from 1693, it is unnecessary to pursue this inquiry any farther at present; and, before I conclude, I shall give a brief sketch of the life of Sir Patrick Dun the first President under the existing charter.

It is much to be regretted, that the events of the life of so liberal a benefactor to his fellow-citizens should be almost unknown, and this is peculiarly the case with Sir Patrick Dun, who has been the means of benefiting society to an extent far beyond what even his most sanguine hopes anticipated.

He was a native of Aberdeen, born in 1642, of a family long settled in that city, and a branch of the ancient family of Dun, of the place called Dun near Montrose. His father was Charles Dun, merchant and burgess of Aberdeen, who died in 1667. Public spirit appears to have existed in his family, for his uncle, Patrick Dun, of Tartie, Principal of Marischal College, was a munificent patron of several institutions, and in particular of the Grammar School of Aberdeen, which he may be said to have founded.

The medical career of Sir Patrick Dun is involved in total obscurity until we find him, in the year 1681, President of the College of Physicians in Dublin, to which office he was again elected in 1690, and appears to have taken an active part in procuring the present charter, by which he was appointed President for the third time. He filled the office of State Physician for several years, and evidently occupied a high rank in his profession.

In 1694, he married Miss Mary Jepson of the County Cork; he resided on the Inns-quay, and died without issue, in 1714, and, in accordance with his will, was privately buried in a vault adjoining the south-west wall, in the inside of the church of the "New St. Michan's" in this city.

For the particulars of his will, and the history of his estates, out of the proceeds of which this noble hospital was chiefly erected, and is mainly supported, and the salaries of the professors and other officers paid, I refer to the "Annals of Sir Patrick Dun's Hospital," published by Dr. Osborne, in 1831.

BIBLIOGRAPHIC NOTICES.

An Inquiry into the Efficacy of Digitalis in the Treatment of Idiopathic Epilepsy. By Edward Sharkey, A.B., M.D., &c. London, 1841. Price 4*s*. pp. 80.

One of the most difficultly attainable acquirements of a practitioner of medicine is the capability of making a just estimate of the value and power of remedies. He who introduces a new therapeutic agent, conceiving that he has discovered in it some quality calculated to relieve human suffering, naturally feels strongly on the subject: and, as words are the echo of thoughts, he expresses himself strongly in its praise, often, indeed, with the energy of hyperbole. Others, induced by these representations to form equivalent expectations, at length discover that experience has not sustained the attributed character; and by the converse process of hyperbolical depreciation, they deny to the remedy the virtues which it really possesses. Between conflicting statements, the truth is scarcely recognizable; and it is only after a retarded course of observation that more correct conclusions can be arrived at.

These remarks apply particularly to digitalis, the subject of the little volume under consideration. No medicine has suffered more in character from the vicissitudes of opinion. Such was the reliance at one time placed upon it, for the cure of phthisis, that when it failed, which was generally the case, it was inferred that the plant had been taken at an improper season, or from an improper soil; that it was badly preserved, or there was some mismanagement in its exhibition. With a medicine possessed of the powers attributed to it, the wonder was, that there was any such disease as consumption. Afterwards it was declared to be of little value in that formidable malady, and there were those who were scarcely inclined to allow it to possess virtues of any kind.

The author of the treatise under consideration is not in the situation of an original promulgator, and therefore does not make his representations under the excitement of a supposed

discovery; he has merely supported the statements of others by new observations of his own. We admit with pleasure that he has executed his task with an air of caution and candour well calculated to inspire the reader with confidence in his conclusions, and these appear to be legitimate deductions from the cases detailed.

The object of Dr. Sharkey's book is to shew, that digitalis, given in large doses, (such indeed as would hitherto be considered startling, and perhaps will be by many still,) has succeeded in curing idiopathic epilepsy, when other remedies, often relied on, had failed.

Should this beneficial agency of digitalis be ever proved, the collaborators in this field of research ought to be enumerated amongst the benefactors of mankind. How far Dr. Sharkey has succeeded in the task he has undertaken we shall not attempt to decide: it will here suffice to adduce a few of the cases recorded, and his conclusions from them.

A young lady had laboured under epilepsy for twelve months, and daily grew worse under the treatment of the most able practitioners. Three ounces and a half of fresh leaves of digitalis, bruised to a pulp, were infused in a pint of ale for seven hours. The liquor was then pressed out; and of this one quarter was taken at a dose, which is the equivalent of seven drachms of the fresh leaves. In ten minutes she had a fit less severe, and of shorter duration than usual. She vomited frequently and violently until next day; and during this period diluting drinks were taken abundantly. Her pulse sank from 120 to 54, was intermittent and irregular. The vomiting continued even until the day after: but she had no fit; pulse 40; cramps; pupil dilated. For two days she continued in the same state vomiting bilious matter: but from that time out she had no fits.

The next case detailed was that of a gentleman severely affiicted by epilepsy for twenty years, who had been treated by several eminent physicians without success. Digitalis was administered to him in the same manner as in the last case, and with the same effects. The prostration of strength and diminution of pulse were absolutely frightful; but he was permanently cured.

A young man had been subject to epilepsy for nine years. He took an infusion of about ten drachms of undried leaves of digitalis, at one dose. In a few minutes after he had taken it, a vomiting commenced which resisted every means adopted for allaying it during five days; there was such prostration of strength that it was at times thought doubtful whether he was dead or alive. He never had a fit after this. Every remedy

that the most experienced practitioner could suggest was tried previously without benefit.

Many other cases are given attended with more or less success. In some, the employment of digitalis proved absolute failures, and these the author does not in the least attempt to conceal or disguise.

Were it not for our knowledge of the impunity with which the peasantry use what in regular practice would be considered terrific doses of digitalis, we should say that the practice recorded in this book is rash. But the author states facts; for we have a right to acknowledge them as such; and we therefore ought not to withhold assent from his conclusions, cautiously and carefully drawn up as they are, viz.:

1. That in the treatment of true idiopathic epilepsy, digitalis in the large dose has had as much success, in proportion to the number of trials made, as either nitrate of silver, or oil of turpentine; and succeeded, too, in cases in which they and other remedies had been fully tried and had failed.

2. That there is good ground for supposing that there is not as much danger in this mode of treatment as would at first sight appear.

3. That it is only in the uncomplicated form of the complaint that (given in this way) it can be expected to succeed, and ought to be administered.

As to the *modus operandi* of digitalis in epilepsy, the author conceives that its action is specific, and does not depend on the known influence of that medicine over the circulation. For when the circulation has been kept in check for a great length of time by the usual doses, no good effect has been produced on the disease. It is large doses only that are effective; and the author adduces reasons for believing that we are yet in the infancy of our knowledge respecting the particular circumstances which give the system a tolerance of such large doses of digitalis as those here mentioned.

Tables of Analysis in the Moist Way, and by the Blow-pipe; together with the Chemical Symbols and Equivalents. By Edward Brittan. 1840.

We are very much pleased by the publication of these tables. It indicates the rapid progress of the taste for studying chemistry in a practical manner; and it is also well calculated, by the facilities which these tables afford, to extend the knowledge of this interesting and useful science. Even a cursory examination

of this little work will demonstrate to the student, that it is not, by any means, a difficult matter to acquire a competent knowledge of chemical analysis. Every acknowledgment is due to Mr. Brittan for the ingenuity and industry which he has displayed in the construction of this useful compilation.

A Practical Treatise on the Bilious Remittent Fever, its Causes and Effects, &c. By W. Arnold, M.D. London.

This is a useful practical work on an interesting subject, by a gentleman who has had much experience. The observations comprise a period of twenty-five years, and, although containing a large amount of information, are compressed into a very moderate sized *readable* book. We have been particularly interested with the medical topography of the different stations in Jamaica, which the author has illustrated with some valuable sketches. There is a strain of quaint humour also occasionally, which adds piquancy to the details. We shall content ourselves with extracting certain "aphorisms," or conclusions from the author's experience, strongly recommending our readers to procure the work for themselves and to study it carefully.

"*Aphorism* 1.—If you are a disciple of the Jackson school, look at your patient well, and estimate justly between the symptoms which indicate and those which counter-indicate blood-letting; study Van Rotterdam's work on the subject.

"2. Remark that no two patients are exactly alike. Beware how you use the lancet with female children, girls under twenty who have and girls who have not menstruated.

"3. If, as in private practice in families, your patient is of this class, do nothing, until you have received from her mother or nurse every particular concerning her present state; when the monthly secretion may be expected; the habitual state of her bowels; examine well her temperament—her idiosyncracy. With this knowledge obtained,

"4. I caution you, as you value your peace of mind, never bleed a girl when she is menstruating, it would be her death.

"5. And so with females who have been mothers.

"6. It often happens that patients of this class will, in the first or second stage, discern that this secretion has suddenly come on; and I verily believe it is often hurried and more profuse in consequence of the fever.

"7. This opinion is well founded; great experience has informed me of the consequent danger of bleeding a patient so circumstanced.

"8. This class of patients requires very great attention, and very careful treatment.

"9. Be careful how you deal with mercury in large doses, or drastic purgatives of any description.

"10. Direct all your energy to the treatment during the first eighteen or twenty-four hours; this is the precious period. Patients of this class will often tell you, when they are sensible in the first remission, that they are very well. Believe none of them; it is morally and physically impossible. Supineness on the part of the medical attendant at this moment is fatal to the patient; make as much of the remission as possible by giving appropriate remedies to lengthen it; if you can establish a remission of six or eight hours, you will be amply compensated in your own mind.

"11. Never give an emetic to male or female if the fever has established its hold for a few hours; you are seldom called before it has; very often you will have to regret your being called too late.

"12. To children, if seen early after the attack, it will be prudent to give a gentle emetic, ipecacuanha; they cannot bear antimony. I have known death to follow two grains of tartar-emetic, although given in divided doses.

"13. Of anti-emetics, the most useful to males and females is the decoction of adru.

"14. Supposing the stomach is inclined to irritability, give it small doses.

"15. Of opium I am very guarded.

"16. Morphia is a better preparation; it has not the great disadvantage of causing constipation, which opium has.

"17. The solution of argenti nitras acts better as an anti-emetic with females than with any other class of patients; and as they are frequently fastidious about the taste of physic, this remedy is probably the least obnoxious which you can offer.

"18. Cold affusion is the most important of all our remedies: if very cold or iced water is selected, before any other part of the body is touched, immerse the hands for a few minutes; after this you may sponge any part of the body with impunity, than which nothing is more grateful to the patient. They shudder terribly if you apply it before the precaution of bathing the hands.

"19. I have frequently remarked, that occasionally bathing the hands and face relieves the very great thirst, which too often prevails during the whole course of this fever.

"20. Tonics and stimulants. It requires great discrimination when to hit upon the exact moment to call these powerful auxiliaries to our aid.

"21. The danger of neglecting them is great. Good hock is one of the safest and best. Quinine, the muriate, is invaluable. Antiseptics I consider but feeble means; when they appear to be called for the patient's fate is generally sealed.

"22. Never, let me implore all those who may enter on practice, when this disease is to be found, adopt a line of practice which may have no further claim upon your mind than the novelty of fashion.

"23. No person skilled in the treatment of this disease will bleed an old resident; such a mode of practice would prove highly injurious."—p. 68.

On the Nature and Treatment of Stomach and Urinary Diseases, &c. &c. By William Prout, Esq., M.D., F.R.S., &c. Third edition.

Those who have been benefited by the labours and researches of Dr. Prout will be delighted to see the announcement of the third edition, so much enlarged as to be almost a new work. For our own parts we regard Dr. Prout as one of the most philosophical writers we possess, and we apply ourselves to the perusal of his work with great pleasure, sure of obtaining much information.

By its present arrangement the volume is divided into three parts.

1. An introduction, comprising an outline of the general physiology and pathology of assimilation, and of the secretion of the bile and of the urine.

2. Of functional diseases, such as those of aqueous assimilation and secretion; of sacharine, and albuminous, and oleaginous assimilation and secretion; the pathology of the incidental matters of organized bodies, &c.

3. Of mechanical diseases, such as calculous deposits in the kidneys, and diseases thence arising; calculi in the bladder, and diseases produced by and liable to be confounded or complicated with them; of hemorrhage from the urinary organs; of suppression, retention, and incontinence of urine, and of the removal of calculi from the bladder.

This table of contents will shew the great extent of our author's inquiries, and we need hardly assure our readers that the subjects are treated with consummate ability. We regret that our limits forbid a more lengthened notice, but it is the less necessary as the volume has long been the standard one on the subject, and is to be found in every medical library. We are sure that the present edition will be duly appreciated by the Profession, and that it will obtain, as it deserves, an extensive circulation.

The Anatomist's Vade-Mecum: a System of human Anatomy. W. J. Erasmus Wilson: with upwards of 150 illustrations by Bagg.

This is, without exception, the most beautiful specimen of book-making we have ever seen. It is got up in the very best style. The paper is white and fine, the type small but exquisitely clear, and the wood-cuts admirable specimens of art. Altogether it does infinite credit to the artists and to the spirited publisher; and we prophesy that its popularity will amply remunerate both. Already we observe that it is in the hands of many pupils, and it bids fair to supersede most of the other manuals.

Mr. Wilson has executed his share of the work in a very creditable manner; as a proof of this we need only refer the reader to the admirable description of the nervous and lymphatic systems, the perineum, the tabular view of the muscles and arteries, &c.

At the same time we think that he has despatched the joints and some other subjects rather too summarily.

The Pathology and Diagnosis of the Diseases of the Chest, &c. By Charles J. B. Williams, M. D., F. R. S., &c. &c.—Fourth Edition.

The fact that a fourth edition is called for is a very good argument in favour of any book, but this was not necessary in the case of Dr. Williams'. It was very well known to the Profession as one of the best manuals (though more than a *mere* manual) of diseases of the chest we possess. We have only to add of this edition that it is an improvement upon the former ones; it contains additional matter well arranged. We are sure that it will be well received by the Profession, as it deserves to be. It has our best wishes.

A Discourse on the Phenomena of Sensation, &c. By James Johnston, M.D., of Birmingham, 8vo. London.

This volume contains "the substance of a course of lectures delivered by the author in the spring of 1838," and, without pretending to originality, is a good resumè of the labour of different physiologists. It exhibits extensive and careful reading,

and a just and candid appreciation of the labours of other men. It is divided into eighteen chapters. Chapter I. On the opinions of the olden Physiologists respecting the Organs of Sensation. Chapter II. On the Composition and Texture of the nervous Matter. Chapter III. On the Distribution of the nervous Matter in the various Classes of Animals. Chapter IV. Of the nervous System of Man. Chapter V. Of the Action of the nervous Matter. Chapter VI. Of nervous Stimulants. Chapter VII. Of the general Laws of Sensation. Chapter VIII. Of negative Sensation. Chapter IX. Of Positive Sensation—internal and external. Chapter X. Of the mental Faculties. Chapter XI. Of the general Laws of the animal Motions. Chapter XII. Of the involuntary Motions. Chapter XIII. Of the semi-voluntary Motions. Chapter XIV. Of Sympathy. Chapter XVI. Of Instinct. Chapter XVII. Of Sleep, Dreaming, Somnambulism, and Reverie. Chapter XVIII. Of Death.

As a specimen ef the author's mode of treating his subject, we shall extract the last chapter—the Death.

" In the foregoing pages, I have endeavoured to explain the relation of sensation to the other functions of animal bodies; and to shew that since the objects of sense possess the property of stimulating the nervous matter, the faculty of receiving and transmitting impressions is not only essential to the excitement of the involuntary motion, and to the cultivation of the intellectual powers, but that by its influence upon the mind, it likewise exercises a control over the *will*, and then indirectly assists in calling into action the voluntary organs.

" Sensation, therefore, being equally indipensable to the discharge of mental and physical functions, is necessarily coexistent with life, and only ceases with it.

" The causes of death may, indeed, be classified according to the mode in which they impair the nervous power.

" 1. Disorganization of the nervous system, and destruction of its influence. To this division belong severe mechanical injuries and morbid changes, either of the nervous centres or of nerves attached to vital organs, such as concussion of the brain, wounds of the medulla oblongata, and softening of the nervous matter.

" 2. Pressure either upon the nerves or upon their centres: or by depression of the skull, and by congestion of blood-vessels.

" 3. Obstruction of the nervous stimulants, such as loss of blood, and diminution of its stimulant properties; either from want of food or exclusion of air; or from organic affection of the heart, lungs, and secretory organs.

" 4. Application of excessive or abnormal stimulants, and substi-

tution of them for the natural stimulants. Under this head may be classed the action of most of the animal, vegetable, and mineral poisons; most of the diseases to which the human race is subject, including inflammation and fever; violent shocks of electricity, and of other powerful agents.

"When from any cause the functions either of the ganglionic or of the spinal system cease, some portion of the vital organs is immediately paralyzed; but when death ensues, either from mental affections, or from disorder of the cerebral system, it is probably to be attributed to the sympathetic influence which powerful impressions on the brain invariably produce upon the respiratory organ.

"As the power of the cerebral system over the other organs is greater in the highest class of animals, in them are its disorders most frequently fatal; and accordingly we find that while the chicken, for example, has been known to live for months after the cerebrum had been removed, a violent emotion of the mind, even without any organic lesion, is capable of terminating the life of man."—p. 262.

The student of the nervous system will derive benefit from the perusal of this volume, which is very creditable to its author.

The Elements of Materia Medica; Part I. *containing, the general Action and Classification of Medicines, and the Mineral Materia Medica; and* Part II. *containing the Vegetable and Animal Materia Medica.* By Jonathan Pereira, F.R.S. and L.S., Member of the Royal College of Surgeons, &c. 8vo. London, 1839—40.

Among the almost innumerable volumes which have recently teemed from the British Medical Press, few there are more deserving of notice than the work before us; we therefore hail its appearance with unqualified satisfaction. The work contains so much fresh material, and altogether wears such a novel dress, that it may be truly said, the path which the author has pursued was no beaten track; and so happy is it in its execution as to render any praise from us perfectly unnecessary, at least to those who have seen it.

A considerable portion of Part I. is devoted to an examination of the means of ascertaining the operation of medicines—their mode of action—their physiological effects, &c.

Classification comes next; and the author, in imitation of Decandolle's arrangement of plants, comprises all classifications under the two great heads, *empirical* and *rational*.

He next notices the several classifications *seriatim*, and then proceeds in detail with his own, of which the following is an outline:

"Class 1. Cerebro-spinants, (*groups, tetanics, paralysis of the motor or sensitive nerves, narcotics, inebriants, sedatives, &c.*

Class 2. Stimulants, incitants or excitants, (*acrids, aromatics, spices, balsams, resins, fetid gums, nervines, spirituous, &c.*)

Class 3. Tonics, (*bitters, astringents, astringent bitters, aromatic bitters, acid tonics, metalic tonics.*)

Class 4. Emollients, (*aqueous, mucilaginous, farinaceous, saccharine, fatty, albuminous, and gelatinous.*)

Class 5. Refrigerants or Temperants, (*acidulous, saline, animal, &c.*)

Class 6. Evacuants.
Diaphoretics or sudorifics.
Errhines, sternutatories, or ptarmics.
Sialogogues, masticatories.
Expectorants, emetics.
Cathartics or Purgatives, (*laxative, saline, acrid, drastic, mercurial.*)
Cholagogues.
Diuretics.
Emenagogues.

Class 7. Abortiva seu acceleratores partûs.

Class 8. Caustics.

Class 9. Rubefacients, vesicants, and suppurants.

Class 10. Acids.

Class 11. Alkalies."

The remainder of the first part is taken up with special pharmacology, commencing with some general remarks on the division of natural bodies into kingdoms, and their respective characteristics: describing the several substances according to their natural historical order.

The second part of the work contains a full exposition of the vegetable and animal materia medica, and an historical and bibliographical table, from the earliest ages of which there are any records down to the present period. Did space or time permit, we might handle this part more in detail, and insert many quotations both interesting and instructive to our readers; but at present we must be content by referring to the work itself, which we can confidently recommend to the select library of every practitioner, who is anxious to alleviate and to allay human suffering. The author, doubtless, has had a successful introduction to the profession; and if our humble approbation of his labours can prove tributary, it is bestowed because it is merited.

P. E.

Lectures on the morbid Anatomy of the serous and mucous Membranes. By Thomas Hodgkin, M.D., formerly Lecturer on Morbid Anatomy at Guy's Hospital. Vols. I. and II., 8vo.

Among the crowd of compilations which daily issue from the press, an original work, such as this of Dr. Hodgkin's, is rare indeed. He has passed the best years of his life in the study of morbid anatomy, with the advantage of all the opportunities which one of the largest hospitals in the metropolis afforded. Of the indefatigable labour with which he has cultivated this extensive field for observation his two volumes present every where striking proofs; not a point of any moment in the vast number of subjects on which he treats is left untouched. He informs us that he began to lecture in 1827, being the first person in England to give a separate course of lectures on pathology. In 1836, he published his first volume of lectures, containing the whole morbid anatomy of the serous membranes, besides the following important subjects: parasitical animals, malignant adventitious stuctures, and the indications afforded by colour. The seventh lecture, which is accompanied with a description of the chief parasitical animals that infect the human frame, contains more information on their nature and varieties than we could have believed possible in so short a space. From the great excellence of this volume a second was anxiously looked for, but did not make its appearance until 1840, an interval of four years having elapsed between the publication of the two volumes. Dr. Hodgkin has thus explained this delay:

"Two causes have produced this delay. A portion of the present volume was already in the press, when a serious interruption to my health arrested its progress. This suspension was quickly followed by my unexpected separation from the institution in which my lectures had been delivered; and this circumstance not merely removed one of the inducements to publication, but deprived me of many of the materials which I had collected, and on which I relied for consultation in the completion of the work."

The second volume extends no further than to the pathology of the last portion of the ilium; the completion of the rest of the alimentary canal is promised in the third volume.

It would be useless to attempt any analysis of a work, the contents of which are so various. We prefer giving a few extracts to enable the reader to judge of the style of the author. The first well exhibits how much he possesses the valuable talent of presenting in a few words a clear and vivid impression of what he describes. The topic is the effects of the important disease, chronic peritonitis.

"In those cases in which the peritoneal effusion is to be attributed to chronic peritonitis, a false membrane, which is often of great tenuity, but closely adherent to the serous membrane, may be detected wholly, or to a considerable extent, investing the surface of the peritoneum. The omentum is contracted, or corrugated and folded up under the greater curvation of the stomach; and at times reduced to so small a compass as to be scarcely recognizable. If old adhesions have partially fixed the omentum to some part of the pelvis, (which is particularly frequent in females, in whom the adhesion of the omentum to the uterus probably takes place during pregnancy) the omentum instead of being wholly drawn up under the stomach, is found extended in the form of a cord, between the stomach and the part of the pelvis to which the adhesion had been formed. Besides the contraction of the omentum, the mesentery is found more or less shortened, by which the intestines are drawn up to the spine; and if a hernia had existed, it will be sometimes found to have been completely reduced.

"The intestines are more frequently reduced in length than contracted in their calibre. In extreme cases, they probably lose nearly or quite half their dimensions, and the valvulæ conniventes are consequently placed very closely to each other. This contraction of the omentum, mesentery, and intestinal canal, is, I believe, perfectly analogous to the contractions of the chest which I have noticed as occurring after pleurisies, and seems to depend on the contractions which newly formed parts undergo after they have become organized or permanent, as we see in the large cicatrices of extensive burns. In the instances now before us the contraction appears to depend in part on the false membrane covering the peritoneum, and partly on the deposit on the attached surface. It is also evident that the original structures are themselves reduced by absorption; partly under the influence of the contraction of the adventitious deposit, and partly under the pressure of the fluid effusion. I am not aware that these contractions, resulting from chronic peritonitis, have been either noticed or explained by any author; except that Dr. Baillie has mentioned that the circumscribed mass, lying under the greater curvature of the stomach; and has attributed this state to the extravasation of coagulable lymph into the cellular membrane between the lamellæ of the peritoneum."—Vol. i. p. 152.

Dr. Hodgkin does not confine himself to the mere detail of the pathological changes of structure, but in many instances relates the history aed symptoms during life; he also not unfrequently draws practical inferences, both medical and surgical, from the morbid alterations of the mucous membrane of the larynx; he says:—

"Inflammation is by far the most frequent cause of morbid appearances in this portion; it occurs in nearly, or quite all, the forms which I have noticed in my general remarks on the inflammation of this tissue. That form which is marked by the almost total suppres-

sion of the secretion is sometimes met with in the living subject, and appears to be characterized by a sibilant respiration; but it rarely falls under our notice in post mortem examinations. The plastic form of the inflammatory effusion is sometimes met within this part of the air tube, producing a thin false membrane; which, although but slightly adherent, is at times widely diffused, not only lining the larynx, but extending upwards to the fauces, so as to be visible from the mouth, and downwards to a considerable distance along the air tube. Sometimes the layer of plastic lymph has little or no attachment to the mucous membrane; from which it may be readily removed, leaving the membrane little altered in its appearance. In other cases it seems lo be slightly attached; and, when removed, it leaves a bleeding surface beneath. These differences, as I have already hinted, are probably occasioned by the different degrees in which the secretion of mucus has been suspended under the influence of inflammation. This affection, which is generally known by the name of croup, is, in most cases, if not invariably, the result of an extremely acute form of inflammation, which often proves fatal in the course of a very few hours. It is met with both in young children and adults, but by far most frequently in the former. A striking example of croup in the adult occurred in the Maternite, whilst I was a pupil in Paris. A young woman, in that institution, shortly after her delivery, washed her neck with cold water; and was almost immediately seized with a violent sore throat, which resisted the active means employed to subdue it. On examining the fauces they were seen covered with a layer of a concrete whitish substance. The dyspnœa and constitutional irritation were very acute; and the patient was carried off by the attack within a few hours after its commencement. A similar case occurred in the Salpétrière, a short time after that which I have just mentioned. I extracted the following account of it from the notes of my friend, Dr. Folville: Mary Frances Charlotte Masson, aged 72, of a vigorous constitution, had for some days been affected with sore throat, for which leeches were applied to her neck. On the day following this application, Dr. Folville was called to this patient, and found her in the following state:—Her face was flushed, her eyes sparkling, her neck tender; her breathing was accompanied by considerable agitation; and the act of respiration was attended by a croaking sound, which seemed cut short. She had a short but painful cough; and experienced the greatest difficulty in attempting to articulate a few words, which could not be heard on account of the noise of the respiration. The deglutition of liquids could not be effected, and that of solids was not attempted. The pulse was full, and the skin hot and dry. The bowels had been confined several days. Dr. Folville, considering the patient to be labouring under croup, ordered twenty leeches to the neck, and a purgative enema. In the course of a few hours the patient appeared a little relieved; and on examining the throat, Dr. Folville observed a large white surface, which appeared to depend on a false membrane. On detaching and raising a part with a spoon, the subjacent mem-

brane was seen to bleed. The following morning she was in *articulo mortis*. The respiration was shorter and more noisy than on the preceding evening. Sinapisms were applied to the legs without procuring relief, and the patient shortly expired.

"*Inspection.*—A false membrane, rough, and of considerable thickness, was found on both sides of the velum. It was closely applied to the parts which it covered, and completely received the impression of their form. It extended into the nasal cavities, and was insensibly lost on the back part of the pituitary membrane; but anteriorly, it was abruptly terminated on the palate. It lined the pharynx, and extended only as far as the commencement of the œsophagus; but it penetrated into the larynx, trachea, and its branches, which it lined so exactly, that after its removal, it might be blown up so as to exhibit the form of the air passages. It was more firmly attached to the larynx than to the trachea. The lungs were gorged, and the brain strongly injected. The viscera of the abdomen were healthy."—vol. ii. p. 45.

Now we are strongly inclined to believe that what Dr. Hodgkin calls croup in the adult, is that disease so admirably described as diptherite by Bretonneau.

"The submucous cellular structure at this pass of the air tube sometimes becomes the seat of morbid affections of the greatest severity and danger. The most remarkable of these is the inflammatory œdema of the glottis and epiglottis; many, if not most, of the examples of this disease occurred in persons who, being affected with syphilis, have been subjected to ptyalism, during the continuance of which they have been exposed to cold. Renal disease, accompanied by coagulable urine, likewise predisposes to this affection. The disease in general is extremely sudden in its invasion; and the symptoms which accompany it bear a great resemblance to that form of laryngitis which is accompanied by a plastic effusion, in the form of a false membrane. The voice is greatly perverted, or lost, and the dyspnœa is most urgent, amounting at last to complete suffocation, by which the patient is carried off. On inspection, the affected parts are found so greatly tumefied, as very nearly, if not quite, to effect the total obstruction of the passage; yet the mucous membrane exhibits very little alteration in colour or texture. On making an incision into the swollen parts, the tumefaction is found to be occasioned by the infiltration of the subjacent loose cellular structure; and on pinching it between the fingers, a colourless, transparent serum is expressed, after which the parts resume their natural appearance. It must, doubtless, be of great importance, to be able during life to distinguish those cases from those of croup, accompanied with a production of false membrane; since the treatment applicable in the one case will probably be worse than useless in the other."

It would appear, that the author is not acquainted with the excellent work of Mr. Porter, in which this disease is admirably described, and the way of diagnosis pointed out, viz.:

passing the finger along the tongue till it touches the swollen and erect glottis, which is felt hard and smooth like a cherry. We think the following remarks on the use of bougies in stricture of the œsophagus well worthy of attention. We fear that more patients are tortured and destroyed by meddlesome surgery than are lost by doing too little.

"Although it is my province to describe morbid appearances, rather than to speak of curative means, I cannot forbear making my protest against the employment of bougies in structure of the œsophagus. My objections are founded on the morbid anatomy of the parts concerned, and on the tendencies of the structures implicated in the disease. These objections not only apply to the case of bougies in cases of stricture of the œsophagus, but to all those cases in which instruments of the kind are used for the relief of strictures in any of the canals lined by mucous membrane.

"The effect of inflammation of the submucous cellular membrane having been the disposition of plastic lymph, by which not only its bulk is increased, but its extensibility nearly or quite lost, and the calibre of the canal of which it forms a part is reduced. We find, on examining an œsophagus in this state, that, in conjunction with the appearances which this description would indicate, that the mucous membrane is firmly and immoveably adherent to the subjacent coats. The altered cellular membrane has so far lost its natural appearance as to merit the appellation of semi-cartilaginous, or even cartilaginous; which latter state Dr. Baillie notices, not on his own authority, but on that of some other pathologist.

"If we reflect on what the operation of a bougie must be upon a mucous canal in the state which I have just described, we can scarcely believe it possible, even with the utmost care, to employ a smooth instrument, covered with some bland and lubricatory material, that the mucous membrane can escape forcible compression from any effort to dilate the contracted canal. In fact, it must be compressed with something like a wedge, since the morbid thickening of the cellular membrane must be greatest somewhere near the middle of the thickened portion, and gradually diminish till it is lost in the healthy structure. Every repetition of the introduction of the instrument must renew the violence to the same part, since the mobility of the mucous membrane upon the subjacent coat is prevented. The effect of such repetitions of irritation can hardly fail to be the production of more or less inflammation, if not ulceration, of the mucous membrane. The subjacent structures must participate in this; the parts already thickened must become thicker and firmer; and the morbid alteration will be extended to portions of the cellular membrane which had hitherto escaped. Another effect to be dreaded from the operation of the bougie, is, that the violence which it thus inflicts may have a powerful influence in exciting the production of some scirrhous or fungoid growth, to which the œsophagus, when once it has become the subject of structure, is pecu-

liarly liable, probably in consequence of the natural movements of the part, which it is impossible entirely to suspend. These, however, must be innocent, compared with the passage of the bougie, and the efforts which the parts must make to resist it.

"I have already remarked, that the symptoms of stricture of the œsophagus may proceed from other causes besides that which I have been last considering; and it may be well to enumerate them here, with reference to the injury which may be done by the passage of a bougie.

"First. There may be no stricture in the œsophagus; and the difficulty of deglutition may arise from disease in the trachea, which, we have seen, has a tendency to propagate itself to the œsophagus; the passage of the bougie might, nevertheless, be interrupted by the spasmodic constriction which its pressure would excite, and stricture might thus be simulated. The repeated application of the bougie in these cases would only aggravate the disease, and hasten the period at which the œsophagus would really participate in it.

"Secondly. Ulceration in the œsophagus produces symptoms in almost every respect resembling those of simple stricture; and although there may, at times, be others to lead to correct diagnosis, there is no considerable danger of their being overlooked, or not sufficiently marked to lead to the distinction, before much mischief may have been effected by the bougie.

"Thirdly. I have already noticed the probability of the employment of a bougie favouring the production of disease of a malignant character. Where the stricture of the œsophagus is already of a malignant description, there can be no doubt that the use of the bougie must tend materially to aggravate the disease, and accelerate the perforation of neighbouring parts, which, in fact, would not be unlikely to take place during the employment of the bougie; the instrument completing what disease may have all but effected.

"Fourthly. Where the impediment to the passage of food through the œsophagus is occasioned by the pressure of neigbouring tumours, whether resulting from adventitious structures, or from the derangement of those natural to the body, it is very evident that the passage of a bougie could effect no good purpose; but, on the contrary, much mischief might be done, by injury to the mucous membrane and subjacent coats. Such a case, provided the tumour were not perceptible externally, might, I conceive, be easily taken for simple stricture, and be treated with a bougie, with all the activity and perseverance which the ascertained integrity of the mucous membrane would seem to sanction."—Vol. ii. p. 254.

With this extract we shall close our notice of this most useful, learned, and laborious work, trusting that we shall not have long to wait for the third volume promised to us by the author. We have one fault to find with Dr. Hodgkin, and it is this, that though he has frequently referred to and quoted

the opinions of his English brethren, and also to the works of the many eminent French writers who have enriched this department of science with their labours, he has not done equal justice to Irish pathologists; but, on the contrary, we were grieved to find, in looking over these volumes, scarcely any notice taken of the valuable additions which have been made by our countrymen to the morbid anatomy of the lungs, of empyema, pericarditis, affections of the larynx, and of the mucous membranes in fever, additions the importance of which has been fully allowed both on the continent and in America.

SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

Twenty-second Meeting, May 2, 1840.

Mr. CARMICHAEL in the Chair.

1. *Specimen of the Effects of Arsenic upon the gastro-intestinal mucous Membrane.*—Mr. Fleming said he wished to present some specimens taken from the body of a young woman aged twenty-five, who had died with symptoms of poisoning a few days before. On the evening of Wednesday, the 29th April, the young woman's husband called upon him about half-past ten o'clock, requesting that he would visit her immediately, and stating that she was labouring under symptoms of an attack resembling cholera. On entering the room her appearance struck him as being very remarkable. Her face was unusually pale, her extremities cold, the surface of the body cool, the action of the heart feeble, and the pulse at the wrist scarcely to be felt. She had vomited immediately before he entered the room, and on examining the fluid ejected he found it to be tinged with blood. He observed at the same time, that the matter passed by stool was devoid of any feculent smell, of a brownish colour and fluid consistence, and without any admixture of blood. He made strict inquiries as to the nature of the food last taken, and whether she had been using any medicine, but could not obtain any satisfactory information. Mr. Fleming called again in about half an hour, and found the patient much worse. Her friends said that she had been married on Monday, and had complained of being sick on the following morning. On Wednesday she was still complaining. Her husband had gone into the country at an early hour, and did not return until eight o'clock in the evening. During the course of the day his sister called on her to take a walk. She found her just after rising from bed, and preparing to dress herself. She expressed considerable regret at her marriage. They both went out at half-past three, and walked for a short time, when the young woman complained of being sick, and expressed a wish to go home. On her return she vomited a quantity of bilious fluid. She

then became better, and walked out again, but again became sick, and discharged her stomach two or three times in the street. Upon her return home her bowels became affected, and between this and the vomiting she sunk rapidly into a state of collapse, and died about half-past eleven o'clock the same night. Her husband called on Dr. Fleming next morning, expressed a wish to have an inquest held on the body, and took from his pocket a paper containing some white powder, and which he stated had been found in the bed. Dr. Fleming had it immediately analyzed, and at once the presence of arsenic was detected. About thirty-six hours after death the body was examined by Dr. Fleming and Mr. Smith. There was no trace of violence on any part of the body, except a slight contusion on the outside of the hand, which might have been produced while throwing about her arms as she lay in bed. The muscles were remarkably rigid. The thorax was natural in its appearance, the lungs somewhat collapsed, the heart not quite healthy, but yet exhibiting no morbid alteration capable of accounting for death. There were some small spots like ecchymosis on its external surface, and its cavities were filled with dark coloured fluid blood. The intestinal tube presented distinct evidences of inflammatory action. Every portion of the mucous membrane of the stomach presented more or less distinct marks of inflammation in an aggravated form. It contained a dark grumous substance like coffee-grounds, mixed with a ropy mucus in great abundance; but there did not appear to be any erosion or destruction of the mucous membrane. A high degree of vascularity pervaded the whole of the intestinal canal down to the colon, where it diminished considerably, but appeared again with increased intensity in the rectum, which appeared to be completely covered with red vessels. It contained a quantity of mucus, but no blood. The uterus was also examined. In its cavity there was a small patch of vascularity approaching to ecchymosis; and on squeezing the fundus on the left side, a quantity of fluid presented itself, having all the ordinary appearance of semen. The same kind of fluid was found in the left fallopian tube. The contents of the stomach were examined by Dr. Apjohn, who detected in them arsenic mixed with flour or starch.

2. *Ovarian Dropsy.*—Mr. Ferrall said, that at a former meeting of the Society he had brought forward a case of ovarian dropsy, in which tapping had been performed several times, and in which it was remarkable, that the sac had not contracted any adhesions to the parietes of the abdomen, athough it had undergone repeated attacks of inflammation. The case which he was about to present was one of the same kind, but of very long duration. The patient, who was about two and twenty years of age, was admitted about twenty months ago into St. Vincent's Hospital. On admission the abdomen was greatly distended, the swelling appearing at first to be the result of ordinary dropsy, but its true nature was afterwards recognized by more careful examination. The tumour of the abdomen was so large that it had pressed the neighbouring viscera

up into the thorax. The pulsations of the heart could be distinguished a little below the left clavicle, and the position of the lung was such, that the respiratory murmur could not be heard lower than the fourth rib. The liver was displaced in a similar manner, and appeared to have ascended as high as the fourth rib. The patient suffered great distress and inconvenience, and was extremely anxious to have the fluid removed. She was tapped seventeen times, and without any bad symptoms, until the seventeenth operation, which was followed by rigors and vomiting. She had, however, no pain, could move about in bed without much inconvenience, and did not lose her strength or appetite. On this occasion Mr. Ferrall diagnosed suppuration of the sac. On the next tapping a considerable quantity of the ordinary glairy fluid was discharged, but it was observed to be mixed with pus. At each successive operation the quantity of pus increased, up to the twenty-third time, when the fluid appeared to be entirely purulent. From the moment pus began to be formed in the sac, the patient began to sink, and died exhausted after the course of a few weeks.

3. *Neuroma.*—Mr. Smith exhibited a series of preparations and drawings, illustrative of various forms of neuroma.

(*a*) *Scirrhous Tumour connected with the digital Branches of the median Nerve, supplying the index Finger.*—The tumour, about the size of a nut, lay upon the outer side of the index finger; it was white, of a uniform texture, and scirrhous hardness; the filaments of the digital branches of the median nerve were separated from each other, and expanded over the surface of the tumour, below which they became reunited; they adhered closely to the surface of the tumour, but were unaltered in their texture. Mr. Smith also exhibited a similar tumour, the centre of which was softened, connected with the lower end of the sciatic nerve; but did not know, whether, in either of these cases, the disease was accompanied by neuralgic pain or numbness.

(*b*) *Serous Cyst developed in the ulnar Nerve.*—The cyst, about an inch and a half in length, of an oblong form, and filled with a transparent fluid, was connected with the ulnar nerve, a little above the internal condyle of the humerus; it seemed to be formed within the neurilema; the filaments of the nerve separated from each other, spread out over the surface of the cyst and compressed, were reunited into a trunk below the tumour, which in this instance had been the seat of the most intense pain, whenever the least pressure was exercised upon it.

(*c*) *Enlargement of the Extremities of Nerves after Amputation.*—Mr. Smith exhibited three preparations, two of the sciatic, and one of the median nerve, taken from stumps; the extremity of each nerve was surrounded by a tumour, white, firm, and fibrous, through some parts of which the nervous filaments could be traced, unchanged in structure, the tumour seeming to be formed by the deposition of lymph, and the condensation of the cellular tissue, around the divided extremity of the nerve; these tumours were unaccompanied by pain. In illustration of tumours of this de-

scription connected with nerves, Mr. Smith referred to the paper published by Langstaff in the Medico-Chirurgical Transactions, upon the anatomical characters of stumps.

(*d*) *Enlargements of Nerves traversing diseased Structures.*—Mr. Smith also shewed the axillary plexus, taken from a woman, who had laboured under cancer of the breast and axillary glands; each root of the median nerve was occupied by an oblong tumour, possessing a scirrhous hardness; the nervous filaments, however, appeared sound. Mr. Smith here alluded to the opinion of Cruveilhier, that the nervous system was not liable to degeneration, and that where a nerve runs through a tumour of any description, when the nerve has been taken out and submitted to the action of nitric acid, it will be found that the fibres of the nerve are of the natural size and texture.

(*e*) *Scirrhous Enlargement of the Gasserian Ganglion.*—Mr. Smith, in conclusion, exhibited a very interesting specimen of what appeared to him to be more like disorganization of the nervous substance than anything he had ever witnessed. The specimen exhibited by Mr. Smith was a preparation of the Gasserian ganglion. Mr. Smith here shewed the relative situation of the parts, and observed, that the tumour engaged all the divisions of the fifth nerve. It had passed through the foramen ovale, the outer boundary of which was absorbed. The patient complained of intense pain in every part supplied by the fifth nerve, particularly in the frontal branches, and those which are distributed to the side of the tongue; nothing, in fact, could exceed the agony she endured. The tumour itself was of considerable size, it was of a fibrous texture, and evidently scirrhous. It had exercised a certain degree of pressure on the vidian nerve, which, however, was not diminished in size, but rather increased. Under the tumour the temporal bone was carious. Mr. Smith said, he regretted he had not taken away a sufficient quantity of the parts to shew the inferior maxillary nerve; but it could be seen very satifactorily in the drawing which he exhibited. It would be necessary to observe, that although there was a certain degree of numbness present, there was no paralysis whatever. (*Museum, Richmond Hospital.*)

5. *Ulcer of the Stomach with Perforation.*—Dr. Hutton presented a specimen of perforation of the stomach taken from the body of a woman aged forty-seven. She was attacked on the 19th of April, with symptoms of abdominal derangement, which had been mistaken for colic, and for which she merely took a dose of turpentine and castor oil. On the following day she was seen by Dr. Hutton, who found her lying on her back, with her knees drawn up, and complaining of intense pain in the abdomen and exquisite tenderness on pressure, in fact with all the symptoms of acute peritonitis. Her pulse was hard and about 108, her tongue loaded, she vomited occasionally, and her bowels were confined. At eight o'clock on the following morning she was in a state of stupor, the abdomen was greatly swelled, and she could not move without severe pain.

She had retention of urine, and on passing the catheter a pint and a half was drawn off. During the course of the day she continued to sink, and died about four o'clock in the afternoon. On making an incision into the abdomen, a large quantity of gas escaped from its cavity. The intestines were slightly glued together by adhesions which were readily broken. The stomach was partially collapsed, and on making pressure at the cardiac end, a portion of its contents were seen to escape through a small round opening on its anterior surface. On opening the stomach an ulcer was observed, at the bottom of which there was a small aperture capable of admitting the passage of a full sized probe. Around the ulcer the mucous membrane was softened and pulpy. The patient died about thirty hours after the commencement of the attack. (*Museum, Richmond Hospital.*

Twenty-third Meeting, May 9, 1840.

Mr. Cusack in the Chair.

1. *Cystitis from Injury of the Spinal Marrow.*—Mr. Lynch said the bladder he was about to exhibit was taken from the body of a man, who had fallen from horseback while riding a race. He was brought into Jervis-street Hospital shortly after the accident, when it was discovered that he had received a violent concussion of the spine, and fracture of the thigh bone. His chief symptoms were loss of sensibility and motion in the lower extremities, with paralysis of the bladder and sphincter ani, and occasional priapism. About five days afterwards the urine became fetid, and strongly impregnated with ammonia. A large dark coloured slough then formed on the sacrum and spread rapidly, and he died on the 2nd of May, nine days after the occurrence of the accident. On opening the bladder, the mucous membrane was found to be highly vascular, and covered throughout its whole extent with a dense layer of coagulable lymph, two or three lines in thickness. One circular spot, which was of a dark brown colour, seemed to indicate a more advanced stage of inflammation. On examining the lower portion of the spinal cord, a clot of blood of considerable size was found between the vertebral canal and the sheath of the medulla spinalis, and opposite to the situation of the coagulum the cord itself was in a state of ramolissement.

2. *Gangrene of the Lung.*—Mr. Smith exhibited a specimen of gangrene of the lung of a very peculiar kind. The patient was a lunatic, who had been admitted into the Hardwicke Hospital for an attack of bronchitis complicated with diarrhœa. After some time he improved considerably, and was removed into the convalescent ward. On the Sunday previous he was again attacked with cough followed by violent hœmoptysis, and expectorated a large quantity of blood, partly fluid, partly coagulated. The hæmorrhage continued on Monday and Tuesday, when it was observed that his breath was becoming extremely fetid, and that his strength was failing rapidly, it was concluded from the symptoms that he was labour-

ing under gangrene of the lung of a very unfavourable character. He died very soon after. During life the principal symptoms were dulness over the whole of the anterior part of the chest, constant cough with hœmoptysis, and extreme fetor of breath. On opening the chest a large cavity filled with blood was discovered in the right lung; the quantity of blood was about a pint, and appeared to be derived from some large vessels in the vicinity which had given way. There was a similar appearance, but not to the same extent, in the left lung. Mr. Smith observed, that the case was an example of the putrefactive gangrene of the lung from decomposing blood, a pathological condition which had been first described by Dr. Law.

3. *Congenital Luxation of the lower Jaw.*—Mr. Smith next exhibited a specimen of original luxation of the lower jaw, the details connected with which are not here given, as the communication will be published in full in an ensuing Number of the Journal.

4. *Fungus Hœmatodes commencing in the Orbit.*—Mr. Adams said, that he had witnessed several cases of what had been considered by persons conversant with pathological phenomena to be fungus hæmatodes of the eye, commencing in the cellular membrane of the orbit, causing displacement and sloughing of the eye, which was greatly protruded from its socket, and terminating always in destruction of life. It would appear that this was a form of disease, of which no examples were seen in Scotland. Mr. Travers has given a good and accurate description of it, but Mr. M'Kenzie, who has written so much on diseases of the eye, says he has not seen any case corresponding to the general description given by Mr. Travers. Mr. Adams said, that he had many opportunities of witnessing the disease, and that on the present occasion he had brought forward a specimen of it taken from the Museum of the Richmond Hospital, to shew that the description given by Mr. Travers was correct. Mr. Adams next quoted some passages from Mr. Travers' work, giving a general description of the disease, stating that he had seen it in children as well as grown persons, that he had seen extirpation of the eye performed with a view towards its removal; but that the disease had returned and proceeded rapidly to the destruction of life. Mr. Adams next exhibited a drawing of a case of this disease, as it appeared in a young girl who presented herself at the Richmond Hospital. He shewed also a drawing and cast taken from an individual, who had suffered from the disease for some years before his death. The nature of the malady was at first not properly understood, and many different names were given to it, before it became sufficiently obvious to determine its true character. It began at the bottom of the orbit, and gradually displaced the eye, which became more and more protruded, until it projected more than half an inch from the orbit. In this case, however, as in most others, vision remained perfect until the cornea became engaged. This gentleman went to London for advice, where he was subjected to various plans of treatment. He used mercury to salivation, and took large doses of hydriodate of potash; in fact, every means supposed likely to produce any relief

were tried, but without effect. On the twenty-seventh of April, some days after his return from London, he was seen by Mr. Adams. At this time he had also a tumour in the temporal fossa, in addition to the affection of the globe of the eye, which had made considerable progress. A distinct pulsation could be observed all over the temporal region and in the globe of the eye. Some time before he left town the cornea sloughed, and soon after a red globular tumour appeared, having all the characters of fungus hæmatodes. The gentleman suffered greatly from pain; but it was more like the pain of hemicrania or neuralgia than of this disease, in which the pain is often slight and dull. Shortly before death he was seized with convulsions, which terminated in coma. Towards the close of life he was occasionally subject to fits of delirium or mental wandering; but in general his mind was collected and he bore his sufferings with great resignation. His death appeared to be chiefly owing to increased pressure of the fungus on the brain. One of the most remarkable points connected with the case was, that he had no hæmorrhage from the tumour either externally or internally. It was also worthy of notice, that shortly after death the tumour shrunk so much, that a cast taken of it would not convey any idea of its shape or dimensions. The disease, however, would be illustrated by another case, which he had witnessed all throughout, and of which he had brought a preparation from the Museum of the Richmond School. The patient was a man named Kelly, who had been a long time in the Richmond, and afterwards died in Jervis-street Hospital. When he first applied for advice, there was no distinct protrusion of the eye-ball; the lower eye-lid was greatly congested, the eye itself extremely vascular, the iris of a different colour from its fellow, and there was a small tumour which could be felt at the outer side of the globe of the eye. Mr. M'Dowel, whose case it was, proposed extirpation of the eye, which was refused by the patient. He said, he did not know any reason why he should part with his eye, as he enjoyed very good vision with it, and did not suffer any amount of pain. This is a common character of the disease; very little pain is felt at first; and, until the globe of the eye becomes so much enlarged as to produce sloughing of the cornea, vision is more or less perfect. This man afterwards acquiesced in the necessity of an operation; but after he had been placed on the table, he again refused, and soon after left the hospital. This was in February, 1830. On the 14th of May Mr. Adams saw him again, and found him much worse; the cornea had sloughed. The disease went on increasing, and the man died with convulsions and coma. Mr. Adams exhibited a drawing of the eye taken while the man was in Jervis-street Hospital under the care of Mr. O'Reilly, and said that it conveyed a very good idea of the appearance of the disease. After this man's death the orbit was found to be filled with a fungous mass, and the bones that compose the orbit were softened and carious. (*Museum, Richmond School.*)

Twenty-fourth Meeting, May 16, 1840.

Abraham Colles, Esq. in the Chair.

1. *Gangrene of the Lung*,—Mr. Ferrall said that the confusion which sometimes existed between pulmonary apoplexy and gangrene of the lung, had induced him to make the matter the subject of inquiry during the past winter, and as the Society were interested in the question, he would beg leave to submit the results.

Mr. Ferrall was led to differ with many persons as to certain forms of gangrene of the lung, and to think that many cases were the result not of excessive inflammation, but of blood extravasated into the tissue of the lung, in which the clot undergoes a process of disorganization, and leads to the formation of gangrenous abscess. On pursuing these investigations further, he found that the clot underwent several changes, each presenting a more or less distinct character. In the first stage the clot is of a brown colour; the colouring matter of the blood is absorbed to a certain extent leaving the mass of a rich brown hue. The specimen which he was about to exhibit would shew this change, which has been well and accurately represented in Dr. Carswell's Plates. The next change which the blood undergoes after extravasation is that which may be termed the grey, or light, ash-coloured deposit. In this form the colouring matter has undergone a further degree of absorption, and a species of cyst is formed which insulates the clot from the surrounding portions of lung. In the specimen exhibited by Mr. Ferrall the reticular tissue of the clot was quite obvious, and the pale grey colour of the deposit very remarkable. This, perhaps, might be termed the grey change. Another change is that which reduces the clot nearly to the consistence of concrete fibrin. Such were the three changes which the blood might undergo after extravasation into internal organs, and yet be absorbed,—that is, it admitted of cure by the process of absorption. But there was another change which it might undergo, and that was the process of puriform softening. This form was best seen in that rare disease, puriform softening of the heart, in which the clots are replaced by cysts filled with purulent matter. Of this Mr. Ferrall had already laid some specimens before the Society. Further than this, the blood may undergo some remarkable changes, as for instance, puriform softening of the clot, with sloughing of the cellular tissue. This was seen in the specimen before him, in which there was a large cyst in the apex of the left lung, containing a quantity of brownish pus with a portion of clot in its centre. This cyst did not communicate with any of the bronchial tubes. This was a state to which the name of gangrene of the lung was frequently given. Mr. Ferrall exhibited a drawing of another case, in which there was a large cyst containing a quantity of semi-fluid blood mixed with brownish purulent matter. He thought that Dr. Law's opinion came nearest to the truth in attributing this form of gangrene to a kind of putrefactive degeneration of the clot, and rejecting the idea that it

was the result of a high degree of inflammation. Perhaps the term putrefactive was in some degree objectionable, for in many instances there was no putrefaction of the clot, which was found to be quite free from fetor, and had no peculiarity of smell to distinguish it from other portions of the lung. Besides, in many instances, the clots are not in contact with the air, and cannot therefore be affected by it. In such cases Mr. Ferrall had not observed any distinct traces of putrefaction, but he had observed them in all cases where the cysts communicated freely with the bronchial tubes.

M. Ferrall, having exhibited some specimens of puriform degeneration of the heart, observed, that the changes which extravasated blood undergoes, under such circumstances, were, the brown change, the grey, or light-coloured, the fibrinous change, (which all appeared to be modifications of the same condition,) and the simple puriform softening, of which the best examples were seen in the heart. Besides these there was the puriform softening with gangrene, and it was on this that the chief difference of opinion existed. It might be thought that all these different changes depended on different states of the system, and that the last in particular was owing to a tendency in the constitution to the formation of gangrenous abscesses. But if three states were found in the same lung it would go to prove that these alterations did not depend upon any particular state of the constitution, but on other circumstances of a different kind. In the drawing which he was about to exhibit there was a gangrenous abscess in the top of the lung; in another section of the same lung there was the brown change with a well marked cyst; in the same lung there was another part in which the grey change was quite obvious. Again, in the case in which purulent cysts were found in the heart there was a concrete fibrinous mass in the spleen and a gangrenous abscess in the upper part of the left lung. It seemed, therefore, reasonable to infer that these changes were not owing *to different states of the constitution.*

With respect to the cyst which is so frequently observed surrounding the clot, Dr. Carswell has not given any description of it in his work on morbid anatomy, although he has represented it with great accuracy in his Plates. He has even gone so far as to state, that extravasations of blood into the substance of the lung are never surrounded with a cyst, but in this he is wrong, for any one who examined them in specimens laid before the Meeting would perceive that they were too firm to be what Dr. Carswell regards them, namely cellular tissue in a state of slough. Andral believes, that clots of blood, in cases of pulmonary apoplexy, may become surrounded by cysts.

2. *Dilatation of the Side, and Tumefaction of the Lung in Pneumonia.*—Mr. Smith said, that the specimen before him was taken from the body of a man aged 50, who was admitted into Hospital on the 9th of May, complaining of dyspnœa with acute pain of the side, cough, and purulent expectoration. The entire of the affected side of the chest was quite dull on percussion, with bron-

chial respiration and muco-crepitating rale; over the oppisite side of the chest the respiratory murmur was clear and audible. The patient stated that he had been ill for three months but had never been confined to his bed or room. Shortly before admission he had been seized with an acute attack, with great aggravation of the pain of the side, increased cough, dyspnœa and purulent expectoration. He died on the 11th May, the symptoms remaining the same as noted on the day of his admission. On examining the body, the first thing which struck Mr. Smith was the difference between the two sides of the chest, the right or affected side measuring fully an inch and a half more than the left or sound side. There was a great degree of fulness also about the false ribs as if the liver was enlarged. On opening the right side of the chest the pleuræ were found to be adherent, but there was no effusion, the cavity being completely obliterated. The right lung was of unusual size, pressing down the diaphragm so as to displace the liver, and compressing the lung of the opposite side. The left lung was emphysematous, and not more than about half as large as the right. On cutting into the right lung it was found to be in an advanced stage of pneumonia, but not presenting the ordinary characters of purulent infiltration; a very remarkable modification of grey hepatization predominated throughout, and on the cut surfaces a countless multitude of small yellow granular bodies were observed, each circumscribed in a distinct cavity lined by a membrane. These bodies possessed a considerable degree of firmness the external coating consisted of coagulable lymph, the interior being soft and composed of pus in various states of fluidity. Mr. Smith observed, that the drawing he was about to exhibit would afford a good representation of the condition of the lung in the recent state. At first sight many persons would be inclined to think that it was a specimen of miliary tubercle, but this was not the case; the appearance in question was produced by the deposition of lymph in the air cells of the lung. It was easy to ascertain, that the little sacs, cells in which the globules of granular lymph were deposited, were air cells, for the granules could be picked out of them with the point of a sharp instrument, and in picking them out it would be perceived that some points of the granule were more adherent than the rest. At these points the granule presented a fine pedicle which stretched into a minute ramification of the bronchi. Mr. Smith then proceeded to demonstrate the external form and appearance of the granules, particularly on that portion of the cut surface of the lung from which the drawing had been taken, and observed, that he looked upon the case as extremely interesting, inasmuch as it furnished an example of a very rare termination of pneumonia. He remarked that every one of the small granular bodies were distinct and isolated, and could be picked out separately from the air cells, and that although he had succeeded in tracing the projection into the minute ramifications of the bronchi only in a few instances, he was inclined to think that it was a general arrangementand, as such was to be looked upon as very un-

usual. One of the most important features connected with the case had reference to diagnosis. The most prominent symptoms of the case would, at first sight, lead a person to think that it was a case of empyema. The dulness on percussion, the enlargement of the side of the chest, the displacement of the heart and liver, and the previous history of the case were all calculated to favour this supposition. Under such circumstances, other sources of diagnosis should be sought, and it was from the presence of muco-crepitating rale that the distinction was to be drawn. Whenever muco-crepitating rale is present it may be very safely inferred that the case is not one of empyema, for in ordinary cases of empyema this sign is absent. With respect to actual enlargement of the lung it is a point denied by many authors, but the present case places the matter beyond doubt. Any one who examined the lung before him would agree that there was an evident increase of volume. The lining membrane of the lung was thickened, the air cells enlarged, and filled with lymph in a state of considerable solidity, and when it was considered that the whole substance of the lung was similarly engaged, it would be easy to conceive that the whole lung might become considerably enlarged. Any one who examined the diseased lung would immediately perceive that it was nearly twice as large as its fellow. One of the most striking evidences of enlargement was seen in the impressions of the ribs on the surface of the lungs which in this case were deeper than Mr. Smith had ever witnessed. The fact of the phenomena of impressions of the ribs on the surfaee of the lung had been already brought before the Society, by Dr. W. Stokes, who had detailed three cases of it, in one of which the chief pathological change was pneumonic solidification. Mr. Smith said, he believed that most of his hearers were aware that Laennec had denied the occurrence of increase of volume in the lung, and stated that the appearance was owing chiefly to collapse of the opposite lung. This opinion, however, was refuted by the case which had been laid before the Society; but the opinions of Laennec, although combated by Broussais and Bouillaud, had been maintained by Andral. Mr. Smith thought it necessary to dwell on the subject, perhaps longer than its real importance seemed to demand. This difference of opinion has been made the subject of discussion by Woelher who supports the opinion of Laennec, and denies the possibility of actual enlargement of the volume of the lung, and attempts to explain the impressions of the ribs by stating his opinion that this phenomenon is produced by the separation of the parietal pleura. Mr. Smith, however, differs from him in opinion, and thought the statement put forward by Broussais and Bouillaud to be correct. Dr. Stokes, in his work on Diseases of the Chest, does not deny this increase in the volume of the lung; but he states, that it is a phenomenon of rare occurrence, and that it is not appreciable during life by any of the ordinary modes of diagnosis. Mr. Smith said he was disposed to think with Dr. Stokes, that this pathological condition was one rarely witnessed, and that it is seldom seen as the result of pneumonia.

With regard to contraction of the side, which sometimes takes place during convalescence from an attack of pneumonia, he wished to make one observation. Woelher has asserted, that this condition was not noticed by the Profession until he pointed it out. The incorrectness of this assertion would be shewn at once by simply stating, that his observations were not published until 1838, while the subject had been fully discussed in Dr. Stokes' selaborate work which had appeared in 1837. (*Museum, Richmond Hospital.*)

3. *Specimen of Flat Foot.*—Mr. Adams wished to direct the attention of the Society to a well known deformity of the foot, called the "flat foot." Upon this subject very little had been said by medical writers, and the anatomy of this condition of the foot, as far as he knew, had not been yet investigated at all, or rather the results of such investigations had not been made known. About one month ago he admitted into the Richmond Surgical Hospital, under his care, a servant, æt. 17, sadly afflicted with this deformity in his left foot, a cast of which he now held in his hand. The bones of the left leg seem natural, but the line of the longitudinal axes of the leg, instead of falling on the centre of the articular surface of the astragalus upon which the tibia rests, passes downwards and very much inwards. The inner ankle is very protuberant inwards, and is much lower and more advanced than usual.

The dorsum or back of the foot is not sufficiently arched, and the foot is broader near the ankle than near the toes; the inner edge of the foot, instead of being arched and raised from the ground where it stands, is flat, so that this innner edge touches by its whole range a plane surface. Besides the obvious deformity of the foot, the patient finds difficulty in walking, and after the labour of the day suffers much pain in all the joints of the tarsus; he walks with the knee somewhat bent and the toe everted, and more on the inner than outer edge of the foot. There is no more elasticity in his movement of this leg than if he had a wooden leg, and there seems to be no motion of flexion or extension of the ankle joint; he cannot, without suffering much pain across the instep, use this foot in running, or standing on the anterior half of the foot with the heel raised from the ground; nor can he ascend a ladder without much suffering; in going up stairs, particularly when carrying any thing, he is always obliged to put the heel and the entire sole of the affected foot flat on the stair, otherwise the ascent would be very painful to him. He cannot state any satisfactory cause for this deformity.

Mr. Adams, assisted by his very ingenious pupil, Mr. Elliott, had an apparatus constructed, which had the effect of elevating the centre of the sole of the foot into an arch; the apparatus was simple, and consisted of an arch of brass padded and covered with chamois leather adapted to the centre of the sole of the foot, and of a shape nearly to fit a naturally arched sole; this arch could be elevated gradually by means of a screw. This apparatus he begged to shew to the Society, and thus explain its simple mode of application; the result of the constant application of this in-

strument for a fortnight while the patient was kept in bed was very satisfactory, as the cast of the foot taken this day would prove, which he now laid before them. There is now, it may be perceived, a hollow arch to be seen in the sole of the foot, and the dorsum of the foot, instead of being quite flat, is really elevated into a well-formed instep, and the axis of the leg seems to correspond more to the centre of the astragalus than to its inner side; the inner ankle is evidently elevated, and by no means so protuberant as the cast taken a fortnight ago exhibits it to have been. The case is still under trial, aud it is a question yet to be tried whether the good will be permanent or not; but the improvement derived has quite exceeded Mr. Adams's expectation. Mr. Hayden, in the Apothecaries' Transactions for Wales, had alluded to the deformity of the foot now under consideration, and had some time ago recommended the arch of the foot to be elevated and maintained in this position by means of compresses of adhesive plaster, and Mr. Ferrall just now told him that he used the plan recommended by this author with success. Mr. Adams, however, thinks, that previously to the treatment of Hayden being adopted, that a fortnight or month's relief of the foot from the pressure of the superincumbent weight of the body, and the coincident use of this active mechanical elevator of the arch of the foot, which he then exhibited to the Society, would he judicious, and that by such a proceeding much time should ultimately be saved in the treatment.

Upon referring to the Museum of the Richmond Hospital, Mr. Smith has shewn me the bones and ligaments, carefully dissected, of a foot of a woman, who died at the age of sixty, and who had an aggravated form of this defect; previously to his having dissected the foot he took a cast in plaster of Paris of it, which cast Mr. Adams then exhibited to the Society. It presented all the characters of the deformity called flat foot in an aggravated condition; the anatomy of this deformity has not yet been described by any writer, and we learn by a letter addressed to the medical officers of the Prussian army by Gorcke, Director-General of the Medical Department, "that the remote and proximate causes of this deformity are still very imperfectly known, and it is therefore much to be wished, that army medical officers would avail themselves of every opportunity which offers to investigate the subject. To do this effectually, deformed feet should not only be carefully inspected; but the parts of the foot ought to be examined after death. By this means we may, Gorcke adds, be able to attain greater certainty, in regard to the cause of the deformity, and, perhaps, to discover a rational plan of treatment."*

Anatomical Examination of a Flat Foot.—The ankle joint and the joints of the tarsus, in the specimen prepared by Mr. Smith, seemed remarkably stiff and rigid; when the integument and soft parts were removed, various bony vegetations were exposed, which had sprung forth from all the bones of the

* See Marshall on enlisting Soldiers.—Edin. xxxix. p. 52.

tarsus from the edges of their articular surfaces; these bony vegetations were true memorials of all the irritation and pain the individual to whom this foot had belonged must have suffered during her laborious life, in consequence of the mal-construction of her feet. The direction of the long axis of the os calcis was more horizontal than usual; but the astragalus, os naviculare, and calceo-navicular ligament were more altered from their normal condition than any of the other structures of the foot; the astragalus, as to its long axis, was nearly horizontal; in the upper surface of the neck of this bone a bony vegetation sprung, and grew up for half an inch in front of the tibia; from this appearance on the upper surface of the neck of the astragalus and that of the rest of the articular surface for the tibia, and from previous experiments, it was evident, that the motions of the ankle joint had been nearly as impossible as if a true bony anchylous had taken place; but this want of motion in the ankle joint seems to have been somewhat compensated for by the greater motion than usual we may infer the middle joint of the tarsus enjoyed; the anterior articular head of the astragalus was large, and the concavity formed for its reception by the navicular bone was greatly enlarged; the calceo-navicular ligament, which in the natural state supports the under surface of the head and neck of the astragalus, &c., made strong and cartilaginous, is in this case, when altogether bony, converted into a very large os lunare for the foot, nearly an inch in its longest diameter, giving attachment by its convex inferior surface to the tendon of the tibialis posticus, and by its superior lunated surface constituting, with the concavity of the os naviculare, a large, glenoid-shaped cavity for the reception of the anterior articular surface of the astragalus. The glenoid-shaped cavity for the reception of the astragalus, formed by the junction of the os naviculare and new sesamoid bone, into which the calceo-navicular ligament had been converted, was fully as large and very much the shape of the glenoid cavity in the scapula, and the narrowest point of the ovoid was divided downwards and inwards, and this point corresponded much to the similar projection towards the inner side and sole of the foot, which, in all cases of flat foot, may be said to constitute a characteristic feature of the deformity in question. The rest of the bones of the foot presented no deformity worth noticing, except that exostotic elevations were conspicuous enough on the line of junction of all the bones. (*Museum, Richmond Hospital.*)

Analysis of the Waters of the African Coast and Rivers.—The Lords of the Admiralty lately transmitted to Professor Daniell, of King's College, eight bottles of water, taken up in the rivers and on the coast of Africa, with a request that he would analyze them, and report as to their effects on the copper sheathing of ships, of which they were found to be especially destructive. With the immediate object of the inquiry we shall not concern ourselves, but some very curious and unexpected results came out incidentally,

tending to shew the probable cause of the miasma, which has such destructive influence on that coast—results especially interesting at this moment, when the Niger expedition is just about to leave our shores.

The most remarkable circumstance (says Professor Daniell) disclosed by the analysis of these waters, is the strong impregnation of the majority of them with sulphuretted hydrogen, which, in the case of the water from Lopez Bay, amounts to almost as much per gallon as in the Harrowgate waters. The proportions of the saline contents do not differ materially from those which are usually found in sea water. The extraordinary presence of this gas would naturally lead, at first, to a suspicion that it might arise from some change which had taken place in the waters after they had been bottled, from the decomposition of some animal or vegetable substance, but this supposition is inconsistent with facts. On the other hand, it is difficult to conceive how such a striking and important fact as the impregnation of the waters of the ocean, upon such a long line of coast, with this deleterious gas, could so long have escaped observation. It is highly desirable, in many points of view, that its existence should be substantiated, and the limits of the phenomenon, both along the coast and in the ocean, ascertained by further evidence. Its effects upon the copper sheathing of ships cannot fail to be injurious, and a question of still higher interest even arises, whether this deleterious gas may not contribute to the well-known unhealthiness of the coasts, from which these waters are taken. Upon searching for evidence of a similar phenomenon having been observed before, I have found, in the Philosophical Transactions for 1839, a memoir of the late Dr. Marcet, on "The specific Gravity and Temperature of Sea-waters in different parts of the Ocean, and in particular Seas, with some Account of their saline Contents." Out of sixteen specimens which he examined, he found one which was brought by Captain Hall. from the Yellow Sea, in the Chinese Ocean, which, from the account he has given, must probably have been as highly charged with sulphuretted hydrogen as those which I have just examined from the coast of Africa; and he observes, "there is something in the development of sulphur in sea water which is by no means well understood." He also noticed, that a specimen, brought by Mr. Schmidtmeyer, going to South America, from latitude 10 deg. 50 min. north, longtitude 24 deg. 26 min: west, had an hepatic smell, and had blackened the bottle in which it was contained. If the existence of this curious phenomenon should be confirmed, the origin of the sulphuretted hydrogen will, probably, be found to be the same as that of the same gas in various saline lakes in different parts of the world, from which trona or natron is derived. The mud of the Lonar Lake in India, of a lake near Maracaybo, in South America, and of similar lakes on the North of Africa, are all found to be thus impregnated. The sulphureted hydrogen thus adhering to the clay has been supposed to be derived from volcanic sources; but Mr. Malcolmson, in an able memoir lately

printed in the Geological Transactions, says, that he has observed "the same phenomenon in the salt water inlets, along the Indian coast, wherever the bottom contained argillaceous and carbonaceous matter;" and he ascribes the effect to the decomposition of the sulphates in the water by the carbon, and the clay only prevents its passing off into the air, or mixing with the water, by the power of adhesion. The subject is full of interest, both in a practical and scientific point of view, and well worthy of observation. In a subsequent report on additional specimens, Professor Daniell observes:—"It is impossible not to speculate upon the origin of the deleterious gas, which has now been proved to impregnate the waters upon the western coast of Africa in such enormous quantities, through an extent of more than sixteen degrees of latitude. It appears to me, that there are only two sources to which it can, with any probability, be referred—namely, submarine volcanic action, in which case its evolution might be considered direct or primary; and the reaction of vegetable matter upon the saline contents of the water, in which case it would be secondary. The probability of a volcanic origin is, I think, small, from the absence, I believe, of any other indications of volcanic action, and from the great extent of the coast along which it has been traced. What is known of the action of vegetable matter upon the sulphates, and the immense quantities of vegetable matter which must be brought by the rivers within the influence of the saline matter of the sea, renders, on the contrary, the second origin extremely probable. Decaying vegetable matter abstracts the oxygen from the sulphate of soda, and a sulphuret of sodium is formed. This acting again upon the water decomposes it, and sulphuretted hydrogen is one of the products of the decomposition. You will perceive that there is a large proportion of the sulphates in the different specimens of water which have been analyzed, and there can be little doubt, I imagine, that extensive mud banks must be formed at the mouths of most of the rivers on the western coast of Africa, within the tropics, consisting chiefly of vegetable detritus in the exact state which is most favourable to the action I have described. This view rests upon experimental evidence, and upon considerations of great cogency, derived from the unhealthiness of certain well-known situations, in which decaying matters from tropical vegetation are brought into contact with sea water. I feel more than ever convinced, that the evolution of sulphuretted hydrogen is intimately connected with the unhealthiness of such situations. When this matter was first brought under my consideration, I was surprised that the nauseous smell which must necessarily be evolved from water impregnated with the gas, at so high a temperature as that of the equinoxial regions, had not been noticed. I have, in consequence, turned to some of the accounts of the late travels in Africa to seek for evidence upon the subject; and, in the narrative of an expedition into the interior of Africa, by the river Niger, by Macgregor Laird and R. A. B. Oldfield, I found the following important observations:—'The principal predisposing causes of

the awful mortality were, in my opinion, the sudden change from the open sea to a narrow and winding river, the want of the sea breeze, and the prevalence of the deadly miasma, to which we were nightly exposed from the surrounding swamps. *The horrid sickening stench* of this miasma must be experienced to be conceived; no description of it can convey to the mind the wretched sensation that is felt before and after day-break. In those accursed swamps one is oppressed not only bodily but mentally with an indescribable feeling of heaviness, languor, nausea, and disgust, which require a considerable effort to shake off.' Now, these observations were made in the very locality from which some of the first waters which I examined were taken, and nothing more is wanting to identify the cause of the rapid decay of the ship's copper with that of the mortality of the climate. It has been experimentally found, that so small a mixture as a fifteen hundredth part of sulphuretted hydrogen in the atmosphere acts as a direct poison upon small animals, and the sensation of languor and nausea, described by Mr. Laird, are exactly those which have been experienced by persons who have been exposed to the deleterious influence in small quantities. The peculiar unhealthiness of the mangrove swamps in all parts of the world, I have little doubt, arises from that tree requiring salt water for its growth, and its decaying foliage being thus brought into immediate contact with the sulphates. The hypothesis also agrees with the fact, (which, I believe, has been established,) that the unhealthiness of such situations does not extend to any considerable distance from the sea."—*Athenæum.*

Iodine to Chilblains.—To the Editor of the Medical Gazette.—Sir, In looking over some numbers of the Gazette, I find a letter under the head of "Treatment of Chilblains by Iodine," Feb. 29, 1840; and as the weather approaches when many will be glad to hear of a remedy for such troublesome visitors, I feel pleasure in bearing my humble testimony *somewhat* to iodine as a cure for chilblains; but I cannot agree altogether with your correspondent, who would have it that, in every instance, it cures. Here I must differ with him; for though I have found the good effects of it when *first* applied, in every case, I must say that when those individuals had a return of the chilblains the same winter, its application proved ineffectual; but I must also remark, that it prevents a return for a much longer period than any other application I know of, and consequently I would give it the preference: besides this, it has the good effect of relieving the pain and itching after the first or second application. Perhaps the manner I ordered it could be improved on, so as to make it beneficial if the person was attacked a secoud time the same winter. Should any of your correspondents suggest an improvement, I shall be happy to adopt it and give it a fair trial. The form in which I used it was as follows:—

℞ Tinct. iodinii, f℥iij.; liniment. saponis Co. f℥v. M. Sæpe applicandum.

I used the soap liniment, because it makes the application more soothing and emollient. I never could apply it when the chilblains had cracked; but if applied when the parts are red and swollen, it becomes a powerful repellent. I never had occasion to order chamois leather, the liniment proving effectual without any covering. Your insertion of the above, if worth a corner in your valuable Journal, will much oblige, Sir, your obedient Servant,

J. Fitzpatrick, M.R.C.S.

October 5, 1840.

P.S.—I first used it in the winter of 1835.

Treatment of Cynanche.—To the Editor of the Medical Gazette.—Sir, Allow me to place before the readers of your valuable Journal, a few more cases of cynanche tonsillaris, treated by guaiacum.

Before relating the following case, I would take the opportunity to express my thanks to Dr. Badeley, of Chelmsford, for his confirmatory remarks regarding the use of the remedy under consideration, and also for the flattering manner in which he takes notice of my paper, in his communication to the Medical Gazette of Nov. 13th. I regret that his success has not been equal to that which I have experienced. I am inclined to think this is owing to the small dose of the guaiacum which he orders: the *recipe which he gives* is not more than half the strength of my prescription; consequently it cannot be expected to have the same effect.

Before I employed guaiacum in the treatment of these cases, I was in the habit of using the means which Dr. Badeley recommends, viz., free scarifications of the tonsils, leeches to the throat, emetics, purgatives, diaphoretics, and, in some instances, general depletion, with considerable benefit, but by no means with universal success. I have, however, found that by the use of guaiacum alone I am able to effect a cure, with greater celerity and certainty, and with much less annoyance and pain to my patients, than by the means above enumerated.

I find that profuse perspiration generally follows the use of the medicine. In some cases nausea is excited, particularly if I prescribe the powder, as I sometimes do. Purging has also been occasionally produced, but in many instances so very little effect occurred in this respect that I have found it necessary to administer purgatives in order to procure free discharges from the bowels.

Case I.—June 16th, 1837. Henry Sterling, æt. 28 years, a stone-mason, of a stout habit, sanguine temperament, complains of headach and severe pain of throat, increased on deglutition: is unable to swallow anything, from the acuteness of the pain. Right tonsil very much swollen, of a deep red colour; the uvula is also inflamed; tongue white and furred; thirst; pulse 98; skin hot; was seized with pain of throat about one o'clock this morning. He has been labouring under a slight attack of bronchitis for four or five days. Has taken of his own accord two ounces of sulph. magnes. which is now operating.

The tonsil was freely scarified, and twelve leeches ordered to the throat, and an emetic of ipecacuanha and tart. antimony administered.

17th. Ten leeches, bled well; the emetic operated freely; he had considerable mitigation of pain and other complaints for nearly three hours, when they returned with their former violence, and have continued since. Pulse 120. Right tonsil presents the same appearance as at noon yesterday: that of the left side is also inflamed.

℞ Pulv. Guaiac. ʒiii.; Mucil. G. Arab.; Syrup. Simpl. ℥ij.; Aq. Cinnamon, Aq. Puræ, aa. ℥iv. M. et solve. Capt. ℥ij. 4ta. q. q. h.

18th. Had only taken two doses of his medicine when pain and difficulty of swallowing began to subside; these complaints are now nearly gone. Headach completely relieved; tonsils much less in size; redness almost gone; tongue cleaner; has taken some breakfast; skin covered with a profuse perspiration; pulse 66. No dejection since yesterday afternoon.

Cont. Mist. Guaiac. et Habt. ℞. Pulv. Jalap., gr. xxv.; Submur. Hydr. gr. viij. M.

19th. Complaints gone; right tonsil slightly enlarged; bowels freely moved.

This is the first case in which I employed the guaiacum, and the result was so flattering, that I resolved to have recourse to it in the next that came under my notice, which shortly occurred and forms the subject of

Case II.—June 29th, 1837. John Stewart, æt. 48 years, a cotton spinner, of a relaxed frame, dark complexion, complains of severe headach and pain of the throat; pain is greatly aggravated on attempting to swallow; face flushed, tonsils highly inflamed, and so much enlarged as almost to meet in centre of throat; tongue furred; pulse 117; bowels said to be regular; was seized yesterday forenoon. Has been frequently attacked in a similar manner; on these occasions he has been bled both locally and generally; has had blisters applied. These means were sometimes attended with relief, at others they failed to procure the slightest benefit.

Habt. Pulv. Guaiac. ʒss. 6ta. quâque horâ, ex decoct. Avenæ. q. s.

30th. Pain of the throat greatly better; can swallow with tolerable ease; headach gone; tonsils less red and swollen; pulse 96; feels sick and inclined to vomit; has had two loose stools.—Cont.

July 1st. Has no pain of throat to-day; takes food and drink with the greatest freedom; pulse 70; tonsils natural here, but rather enlarged; nausea still continues; bowels freely moved. Intermit. medicament. This man has had several attacks since the above, in all of which he has been cured by the use of the mixture prescribed.

Case III.—August 21st, 1839. John Hamilton, æt. 39 years, a carpenter, of stout make, low stature, and dark complexion: has

both tonsils very much inflamed; cannot swallow his food from excessive pain of throat; complains of severe headach; pulse 120; skin hot and dry; tongue furred. Was seized last night as he was coming home from his work. Had a similar attack about three years ago, when I bled him from the arm, applied leeches to his throat, and made very free scarifications of tonsils with considerable benefit; but in spite of these means suffocation eventually occurred.

℞ Pulv. Guaiac. ʒ iij.; Mucil. G. Arab. Symp. Simpl. aa. ℥ ij.; Aq. Cinnamon. Aq. Puræ. aa. ℥ ij. M. et solve. Capt. ℥ ii. 6ta. q. q. hor.

22nd. Is much better; inflammation of tonsils much reduced, but they have not resumed their natural appearance; has taken his dinner with very little annoyance from throat; pulse 86; has had four large dejections.—Cont.

23rd. Is quite well.

Intermit. Medicament.

Case IV.—Sept 30th, 1839. John Hart, æt. 24 years, a stout farm servant; has both tonsils much inflamed; he has great pain of throat, particularly on deglutition; headach; tongue furred; skin hot; pulse 108; bowels said to be regular. Was seized 36 hours since, after exposure to cold.

Habt. Pulv. Guaiaci. ʒss. ex decoct. Avenæ. q. s. 6ta. quâque horâ.

Oct. 2nd. Is free from complaint; tonsils slightly enlarged, but redness completely gone: medicine produced sickness, and a profuse perspiration: bowels were twice moved yesterday, and once to-day.

Intermit. Medicament.

Case V.—March 21st, 1840. Wm. Taylor, æt. twenty-seven years, grocer, a stout active man, complains of severe pain of throat, much increased on deglutition; velum, pendulum palati, and uvula, much inflamed; left tonsil very red and enlarged; right tonsil red, but not swollen; headach; skin hot; pulse 96; breathes easy.

℞ Pulv. Guaiac. ʒ iij.; Mucil. G. Arab. Syrup. Simpl. aa. ℥ ij.; Aq. Cinnamon. Aq. Puræ. aa. ℥ ij. M. et solve. sumt. ℥ ij. 4ta. p. q. h.

12th. Pain and enlargement of tonsil gone, as is nearly the inflammatory appearance of fauces; pulse 76; bowels freely moved. Cont.

14th. Complaints cured.

Intermit. Medicament.

Case VI.—Sept. 10th, 1840. Miss E——y, æt. nineteen years, a healthy young lady, of fair complexion, and lively manner, complains of headach and inability to swallow, from pain of throat, particularly left side; left tonsil enlarged, and of a deep-red colour; right tonsil slightly red, and swollen; tongue very much coated with a dirty brown fur; pulse 118, and skin hot; bowels have been opened by some magnesia, which she took last night, when she was first attacked with chilliness, and pain of throat.

She was ordered the mixture prescribed in the last case, and, on the 13th, was free from all complaint.

Case VII.—19th. Mrs. C., æt. twenty-four years, a stout lady, complains of pain of throat, and severe headach; face flushed; both tonsils, particularly right one, enlarged and red; velum, pendulum palati, and uvula, of a similar appearance; tongue white and furred; rigors; bowels confined; catamenia regular.

Habt. ℞ Pulv. Guaiaci. ʒv.; Mucil. G. Arab. Syrup. Simpl. aa. ℥iij.: Aq. Puræ. ℥xij. M. et solve. Capt. ℥ij.; 6ta. q. q. hor.

21st. Throat well.

Intermit. Medicament.

Case VIII.—Nov. 21st, 1839. A. M'Dougall, æt. twenty-eight years, of low stature, sallow complexion, black hair and eyes, complains of severe pain of throat, attended with inability to swallow; headach; rigors. On examining throat, tonsils and uvula present a very inflammatory appearance; tonsils touch uvula on both sides; pulse 108; skin hot and dry; tongue covered with a thick yellow fur: was attacked two days since.

Habt. Pulv. Guaiaci. ℥ss.; ex decoct. Avenæ. q. s. 6ta. quâque horâ.

23rd. Cured.

Case IX.—Nov. 28th, 1838. David Wilson, æt. thirty-four years, complains of headach; pain of throat and back; has great difficulty in swallowing; tongue furred; mucous membrane of fauces very red; tonsils greatly enlarged, as is also uvula; pulse 110; rigors; skin hot; has had bowels freely moved by ol. ricini; has been ill for upwards of two days. He was ordered the powder as in last case, and in two days was perfectly well.

I will not occupy much of your space by any lengthened observations, but conclude by merely remarking, that my object in bringing the subject under the notice of the Profession was to shew the beneficial results which I have experienced from the use of the drug in the disease in question—an affection in which I have every reason to believe it is but very little employed by practitioners. I by no means claim any thing like infallibility for it. I had two failures in my own practice, as I stated in my former communication; and I have no hesitation in asserting, that such will occasionally occur, particularly in cases where suppuration has taken place previous to its administration: in instances where the patient cannot swallow it in sufficient quantities to produce a salutary effect; and many other circumstances connected with particular cases may occur to prevent it producing any sanative influence. But when timely exhibited, and in full doses. I am convinced it will prove signally successful in a vast majority of cases.

I am, Sir, your obedient servant,

Joseph Bell,

Surgeon.

Banhead, Dec. 10th, 1840.

Iron and Zinc in Diabetes.—To the Editor of the Medical Gazette.—Sir, If you think the subjoined case of diabetes mellitus of sufficient interest for insertion in the Medical Gazette, it is at your service.

H. F. æt. 38, an agricultural labourer, called on me for medical attendance towards the close of last March: he was then labouring under considerable debility: the quantity of urine secreted was much more than natural, and an increase had been noticed for two months previous. He complained of a sense of weight at the epigastrium, much increased after taking food: great irregularity in the action of the intestinal tube, with acid eructations; tongue white, and chapped in the centre, with red edges; pulse 84, very feeble: there was no evidence of any previous implication of the lungs, as the stethoscope and percussion gave no signs of any pulmonic disease. I found on examination the quantity of urine voided to amount to eighteen pints in twenty-four hours, of a decided saccharine taste, sp. gr. at 60° 1023; on evaporation more than 6 drs. of solid extract was yielded by a pint, so that about 108 drs. of solid matter was secerned daily. I recommended an increase of meat in his usual diet, and prescribed

℞ Pil. Opii. ℈j. Ext. Hyoscyami. ℈j. M. fiant Pilulæ xxiv. Cap. i. ter in die.

This, with attention to diet, diaphoretics (the use of Dover's powder, o. n.) was unavailingly persisted in for some time. Then uva ursi, alum, and catechu, were administered, without any apparent good effect; the disease still progressing. Considering the important action of the sympathetic over the secretions of the digestive apparatus, and the evident derangement of the whole nervous system, whether primarily or secondarily affected, I determined to make use of the mineral tonics: to that intent I administered

℞ Ferri Sulphat. ʒi.; Zinci Sulphat. ʒi.; Ext. Anthem. ℈ij. M. fiant Pilulæ xxx. cap. i. ter in die.

Under the use of this medicine the symptoms gradually decreased, and in the space of about two months no trace of the disease remained: towards the end of June this man resumed his agricultural occupations, and has not since had any return of the disease.

I am, Sir, your obedient Servant,
E. Howard.

Rotherfield Sussex, Nov. 2, 1840.

Acetate of Lead in Bronchitis, by William Henderson, M.D., Fellow of the Royal College of Physicians, and Lecturer on Practice of Medicine, Edinburgh.—Several years ago, having had repeatedly occasion to regret the inefficacy of the medicines commonly used in bronchitis, when the object in view was the restraining of a too abundant secretion, by which the bronchial tubes were loaded, and the respiration greatly embarrassed, I was glad to avail myself of a notice contained in the Medical Gazette of 1833, and extracted from Rust's Magazine, in which the virtues of the acetate of lead were repre-

sented as specially adapted to the circumstance in question. The cases in which I had the greatest reason to feel the want of a remedy which could restrain the secretion from the bronchial membrane, were the bronchitic disorders of children, occurring in connexion with measles and with hooping-cough; and it was in cases of this kind that I had subsequently had the satisfaction of first witnessing the beneficial operation of the acetate of lead in inflammation of the bronchial mucous membrane.

After a careful investigation of the powers of this remedy, continued for several years, and based on an ample compass both of personal observation snd the reported experience of several practitioners to whom I recommended the use of it, I feel warranted in stating my conviction, that the acetate of lead is a remedy by far the most worthy of reliance in bronchitis attended with profuse secretion. The useful agency of this preparation is not confined to the bronchitis of measles and hooping-cough, but is equally observable in the simple bronchitis, and in that which so often occurs as a complication of continued fever. In whatever class of cases I have prescribed it, its administration has been limited to that period of the bronchitis in which the evidences of abundant secretion were apparent; and those evidences have formed the only guides which I have found it requisite to follow in the first exhibition of the remedy, and in regulating the bulk and frequency of the doses. The stage or duration of the disease does not require to be regarded in prescribing the acetate; and, though it exerts a signal and most salutary influence on the secretion of chronic mucous catarrhs, it has always appeared to me that its chief value consists in the rapidity of its operation in sach acute cases as are characterized by copious secretion, whether of the muco-purulent appearance or not, whereby the respiration is impeded, and suffocation is threatened.

In acute bronchitis, diverse effects have been observed to succeed the use of the lead. In some instances a very speedy and entire removal of the rattles has ensued, without the pulse having been lessened in frequency, or the respiratory acts materially altered from their previous condition. In such I have been accustomed to omit the lead, and recur to the antimony, ipecacuan, and calomel, or to whatever remedy had been previously used. In a second class of cases, the rattles have merely undergone a considerable diminution, while the other symptoms have continued nearly or altogether as before. In those I have found it of great advantage to alternate, with the exhibition of the acetate of lead, either the antimony or calomel and ipecacuan. In a third class, no material change of any kind has followed the use of the lead for several days. The cases of this class, for the most part, consisted of hooping-cough, with intense general bronchitis; and in the treatment of them, the acetate has been given in much larger quantity, and continued longer than in the others. I have repeatedly ascertained, in cases of this kind, that though the number of rattles, and the apparent amount of the secretion, seemed but little reduced from the state which they had presented on the

lead being first administered, a marked change for the worse has followed the omission of it. In this class of cases, the doses of lead have been usually alternated with those of some common remedy; yet the latter have been frequently omitted, unless some indication of pneumonia existed, without apparent disadvantage. In a fourth class, composed mostly of cases in which the secretion appeared, from its extreme abundance, to be the principal cause of the more harassing symptoms—to wit, the hurried acts of respiration, dyspnœa, and consequent restlessness, &c.—the decrease in the number of the rattles, more especially the larger mucous rattles, which has commonly soon followed the administration of the lead, has been very generally accompanied by a commensurate decrease in the other important symptoms. In not a few instances of feeble children, labouring under acute general bronchitis with copious secretion, have the effects of the acetate been observed, by myself and others, so promptly and decidedly manifested as to excite no little surprise, and to alter the prognosis speedily from a very gloomy to a very cheerful aspect.

The dose in which this medicine may be given must vary with the exigencies of the case and the age of the patient; though the latter particular is of less importance. Indeed I have hitherto found occasion to give it in much larger quantity to children than to adults, owing to the much greater frequency and severity of acute bronchitis in the former. The quantity taken in twenty-four hours by an adult has not exceeded twelve grains, in doses of from one to three grains. The cases of acute bronchitis in the adult in which I have used the lead have been mostly complications of continued fever. Along with the lead there were usually given a few grains of the compound powder of ipecacuan; sometimes with the addition of the powdered squill. The common doses to children have been, according to the severity of the case, a quarter, half, or whole grain, from to eight or ten times a day. In one very severe, and at one time almost hopeless case, so much as four scruples were swallowed within ten days. The child was six years old, and the disease intense general bronchitis, supervening on hooping-cough. No such bad effects succeeded as are too commonly dreaded from the medicinal use of the acetate of lead, though the gums corresponding to the lower incisors exhibited the blue tint pointed out by Dr. Burton, on the fifteenth day from the commencement of the use of the lead, and it is probable that it existed previously to that date, though unobserved. Nor have I hitherto witnessed in any case the dreaded effects of the lead, not even to the extent of causing constipation.

In the chronic mucous and muco-purulent bronchitis, there is no remedy, I firmly believe, (and I have tried a great many,) that possesses nearly the controlling power over the quantity of the secretion, which is displayed by the acetate of lead. I usually give it in a pill containing one or two grains, along with some extract of hyoscyamus and a grain of squill, three or four times a-day.

I have thought it of consequence to let the experience which I have had of the properties of this remedy in bronchitis, be known;

because it appears that they have nearly or entirely escaped the notice of the generality of practitioners. The only suggestions with which I am acquainted, of the utility of the acetate of lead in bronchial inflammations, besides that to which I have referred, are by Sauvages, in his Nosologia Methodica; by Dr. Reese, in the fifteenth volume of the Medical and Chirurgical Review (both of whom recommend it merely to relieve irritation in hooping-cough;) and by Dr. Stokes, in his first volume on Diseases of the Chest, who conjectures that it might be of advantage in certain forms of chronic bronchitis.—*London Medical Gazette.*

Pure Tannin a Remedy for excessive Perspiration, by Dr. Charvet.—Sweating is a morbid symptom which is often so serious and inconvenient, that the practitioner is obliged to combat it by special remedies. The acetate of lead, which has been extolled of late years, sometimes causes inconveniences which hinder many practitioners from employing it in cases where its use seems clearly indicated. Pure tannin, employed as an anti-sudorific, appears to be free from these disadvantages. The author has employed it for two years at the hospital, and in his private practice, and though it has not succeeded in every case, it has in almost all.

He prescribes it in the form of pill, and in the dose of from two and a half to ten centigrammes (half a grain to two grains) in twenty-four hours, generally in the evening, with or without opium, which neither checks nor favours its action. The first time he administered it was in the case of a phthisical patient, who was already in a state of marasmus, and whose cough, fever, and oppressed breathing, were less troublesome than the general perspiration with which he was inundated every night. The patient asked for some medicine against the perspiration, which he considered the sole cause of his sufferings, and was ordered twenty-seven millegrammes (about three-fifths of a grain) of tannin. The next morning he said he had passed a good night, and hardly felt moist when he awoke. The repetition of the same dose every evening was sufficient, during several weeks, to suppress the perspirations entirely; but they returned as soon as the medicine was omitted. The dose was raised to five centigrammes (a grain), and then to eight (one grain three-fifths), and always with the same success. The author relates several other cases in support of the antisudorific property which he attributes to tannin; they occurred among consumptive patients who had arrived at the last stage of the disease. They are additional examples of the activity with which tannin suppresses sweating, even when the disease from which it arises is beyond the resources of our art.—*L'Expérience*, and *Gazette Médicale.*

On the Lymphatics of the Brain, by F. Arnold.—In his researches on the structure of the brain and spinal cord, and in his Icones Anatomicæ, the author has published the first complete de-

scription of the absorbents of the brain. In the dura mater, veins only were for the most part filled by the injection, but he obtained very successful mercurial injections of the absorbents of the pia mater. He distinguishes three different networks: 1st, a superficial delicate one, whose vessels are one-sixth of a line in diameter, and whose meshes are extraordinarily minute, lying in the cellular tissue which connects the arachnoid with the pia mater; 2nd, a deeper and coarser network also in the subserous tissue of the arachnoid, and composed of vessels with a diameter of one-fourth of a line; 3rd, a still coarser net-work, with vessels one-half of a line in diameter, and with such narrow interspaces, that when they are filled the brain seems completely covered by the injection. This network, however, is contained in the pia mater, and passes with its plexus into the depths of the furrows between the convolutions. The trunks of the absorbents into which these networks are continued take the course of the veins on the surface of the brain, accompany them closely, and pass with them and with the arteries through the foramina in the skull. In the choroid plexuses of the lateral and third ventricles there are lymphatic networks and small trunks, which collect into one considerable trunk, accompanying the vena magna Galeni. The absorbents of the very substance of the brain, which probably go with its small veins, could not be filled: they always gave way just on the walls of the ventricles. At present also the attempts to inject the absorbents of the spinal cord have had no success.—*London Medical Gazette.*

Economy in Leeches.—If the hinder part of a leech be cut off before it is applied, it will usually remain on for several hours, the blood constantly dripping away from the wound (like the water from Munchausen's horse.) A leech thus treated will suck as much as four others, if too much of the tail have been not taken off, and if the operation be not performed with blunt scissors.—*Dr. Budge* in *Med. Correspondenzblatt.*— Bd. 9. No. 31.

M. Gannal's Mode of Embalming.—In November, 1838, M. Gannal made a visit to London for the express purpose of testing the value of a fluid he had discovered, and which, he believed, had the full power of arresting putrefaction, and completely preserving animal bodies. The body of a man, aged 33, was placed at the disposal of M. Gannal for the purpose of being embalmed. The individual had died of epilepsy and disease of the brain on Nov. 5, 1838, and was removed to the Anatomical Theatre, Little Windmill-street, on Nov. 9th. The weather at this time was particularly mild and humid: the appearances of commencing putrefaction were visible over the abdomen, and about the root of the neck; there was also a foul ulcer the size of a half-crown on the right leg. M. Gannal considered the body was favourable for the purpose, as it was muscular and well-proportioned. He conducted his process of embalming in the pre-

sence of Mr. Gregory Smith, who made the condition that he should be present during the whole time, and that the body should remain in his *custody* until the period arrived for its being opened. We are informed that M. Gannal cut down upon the left carotid artery, and injected, with a common syringe, about two quarts of his preservative fluid in a direction towards the heart; a small quantity of the fluid escaped from the ulcer on the leg; the pipe was withdrawn, and the wound neatly closed by suture; he then, with bits of cotton moistened with the essence of cloves, and tinged with carmine, wiped over the surface of the body, and placed a little colour upon the lips; the body became quite firm in about half an hour; and it was remarked that the scrotum, which, before the injection was relaxed, now became corrugated and firm, the urinary bladder was not emptied, nor were injections of any kind thrown into the bowels; the body, with the exception of the small wound in the neck, remaining perfectly undisturbed. On the following day it was evident that all appearance of putrefaction was gone; the body remained firm and unchanged, and the countenance was remarkably placid and natural. On the 13th of November, M. Gannal finished the embalming by introducing glass eyes, the contents of each globe having been previously removed, and placed a little powdered alum in the orbit; the body was dressed in a shirt and drawers, and bandages applied from the feet upwards; a small quantity of the powdered alum was sprinkled over the genital organs; the bandages were moistened with the spirit of rosemary; over the bandages oiled silk was placed in separate pieces, one to each leg, a third to inclose the trunk, and a fourth for the head and neck; the whole body, excepting the face and hands, was then inclosed in a thin expansion of sheet lead, similar to that employed in packing tea; in a bottle were placed the particulars of the individual's death, and the circumstances connected with the embalming, signed by M. Gannel. The body was afterwards swathed in bandages from the feet upwards, altogether about two hundred yards were employed; the face and hands were then glazed with a little fine wax, and M. Gannal pronounced the embalming to be completed. All who had the opportunity of seeing the body allowed that it looked remarkably well, and the countenance as natural as possible. In about ten days afterwards the body was placed in a leaden coffin with two small windows, corresponding to the face and hands; it was soldered down, which occasioned some moisture upon the inner side of the glass, and it was again opened and allowed to remain so; the body was placed in a room detached from the building, and was exposed to the heat of the sun in summer, and the damp of winter; there was occasionally, however, a fire in the room; no perceptible change was observed for many weeks; the wax upon the face cracked, and began to peel off, and displayed the skin of the face drying; a fresh coating of it was, therefore, applied about nine months after the first date of the embalming.

In december, 1840, it was determined the body should be removed from the coffin, and that it should undergo an examination in

public; consequently a large number of the members of the profession and other scientific persons assembled on Tuesday, the 15th December, to witness the unrolling of the bandages from the body, which had now been embalmed upwards of two years. Mr. Gregory Smith superintended the examination; previous to which he briefly explained the circumstance which had given occasion to the investigation. The bandages were removed, and, in some places, more especially about the feet, were damp, and strongly impregnated with a mixed aromatic and acetous smell; the oiled silk had evidently been destroyed by this fluid exhalation, and the lead in parts had perished from a similar cause: the bandages were perfect, and might have been removed separately; to save time, however, they were hastily divided, and the entire body laid bare. No other odour than that which the coverings emitted, was perceptible during the examination.* The appearances seemed to indicate that the body had shrunk, but not so much as might have been expected: it remained in most parts soft and elastic, and presented generally the waxy appearance before mentioned, and had rather a dark tinge. Those parts which had been more exposed, such as the head and face, the hands, and part of the left arm, had become dry and firm, and of a brown colour. The lower part of the legs and the feet were of a darker hue, and the bandages in the neighbourhood very moist, so as to give rise to the idea that they were rather less perfectly preserved. The abdominal parietes were soft, and easily divided; and, upon exposing the muscular structure, it was noticed to be firm and resisting. The abdominal viscera were *in situ*, and could be handled without danger of tearing them; they were more dry than usual, but in other respects would admit a very close examination. The lower part, as well as the arch of the colon, contained hardened fæces, and some portions of the ingesta might be felt adhering to the inner surface of the small intestines. The liver was reduced in size, but soft, and was, with its ligaments, carefully examined. The kidneys and the urinary bladder, which was empty, were all in a good state of preservation; as was also the spleen and pancreas. The chest was examined; the left lung was firmly adhering to the inner surface of the ribs, and it was sufficiently obvious that there had been considerable disease of that side of the chest. The heart was firm in structure, and readily admitted examination as to the condition of its valves; there were masses of coagula in a firm state in the right auricle; the right lung was collapsed. There was no fluid in the chest, nor in any cavity of the body. The head was next opened, and from the

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* This may have been perfectly true with regard to those who were seated on the lower benches immediately around the body, or who took part in the process of unwrapping. But having ourselves visited the theatre at an advanced period of the examination, and, by the upper door of the apartment, we must confess that our nose was assailed by a most insalubrious and disagreeable stench, in which neither pyrolignic acid nor aromatics, put putrid flesh, claimed the predominating place.—Sub-Ed. L.

hurried manner in which it was obliged to be done, from the length of time which the investigation necessarily occupied, the dura mater was torn, and the brain displaced; but it was found in parts to be firm in structure and well preserved; other parts were soft and cream-like, particularly near the posterior part of the cerebrum and cerebellum, probably from the gravitation of the fluid confined in the brain, or from disease of this organ which had caused the death of the individual. Examinations were then made to ascertain the condition of the muscular and other structures of the limbs; in some places these were found so well preserved as to retain their original colour, and they could be readily separated from the surrounding cellular membrane, so as to admit of a dissection taking place, although the parts were too dry for it to be done with the usual facility. The knives used in the examination were unaffected by the fluid.

During the time M. Gannal was in town, many other experiments were tried to prove the value of the preservative quality of this fluid. An ass colt, of five months old, was killed on the 12th of November, 1838, with hydrocyanic acid; the next day the body was injected, previous to which it was observed, that it was in a very unfavourable state; the abdomen was so exceedingly tympanitic as to threaten the bursting of the parietes, consequent on the fermentation of a quantity of food in the stomach and bowels at the time of death. The blood of the animal was fluid. A pipe was placed in the carotid, and about three pints of the fluid injected towards the heart: the effect was marked in the firmness and rigidity of the extremities, also in the neck and face. The animal was allowed to remain untouched in the dissecting room for about a month, and was placed near a large fire daily. The body was then dissected, and it was found that the fluid had not distributed itself equally to all parts; there was a very marked difference in that which had received the fluid from that which, from the extreme tension of the belly, it had never reached; these parts were rapidly passing into a state of decomposition, and smelt extremely offensive. It was the best possible example of the preservative quality of the fluid; some preserved portions of the animal were thrown into a cellar and exposed to damp; after some months these were again examined, and cut into. Below the surface, which was covered with mildew, the structure was found to be perfectly fresh, and of the same colour as on the former occasion. Another portion was buried, and presented a similar condition after having remained in the ground for two or three months, and in one instance for six months. The fluid has been employed very largely by the patentee, Mr. George Smith, John-street, Oxford-street, in the preservation of objects of natural history, in which birds as large as a peacock have been prepared without the slightest derangement of the internal parts, and after being placed in proper attitudes have been kept in common sitting-rooms without the slightest unpleasant smell being discovered.*

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* Many specimens of birds were exhibited at one of the meetings of the Med. Chir. Society about twelve months since.—(*Rep. Lancet.*)

In the smaller birds M. Gannal considers it necessary merely to throw the fluid down the trachea; but in quadrupeds and the larger birds he prefers sending it more directly into the circulation. M. Gannal states, that very many experiments have been made, and the most rigid trials have proved how completely the animals preserved by this fluid are protected from the ravages of the museum insect, which every anatomist knows to his cost is so extremely destructive to anatomical preparations. Portions of flesh and different structures were also immersed in the fluid, and have remained preserved, and in some instances retained part of their colour. Among other specimens exhibited, was a mutton chop and the heart of a lamb. Two bodies were injected with some of this fluid for the purposes of dissection, and as far as the preservation of the parts seemed to answer admirably; but the colour was a good deal altered, and, from the report of those gentlemen employed in the dissection, the fine edge of the knife was soon removed, and in the winter season the opinion was in favour of the old method of injecting with the solution of nitrate of potash. To sum up as to the preservative qualities of this fluid, there can be no doubt but that it may be made available to many very useful and important purposes, not only as regards science but in a social point of view; among these might be enumerated the arresting putrefaction, when developed quickly from sudden or violent death, or when desirable that a body should be removed to a distance, or that it should be identified for the purposes of justice, in burials taking place in churches, and in the preservation of the bodies of noble or illustrious personages.—*London Medical Gazette.*

Speedy and certain Rubefacient and Vesicant.—Dr. Fehr, of Gundelfingen, frequently uses the following means with a beneficial result:—Bruised cantharides, concentrated acetic acid, and alcohol, of each four ounces. Digest for several days, and strain. The fluid to be applid on linen, or by rubbing."—*Pommers Zeitschrift*, Bd. i. g. H3.

Cure of Aphonia by Ammoniacal Vapours.—A young lady was affected, in consequence of a cold, with complete loss of voice, which had already existed three months, notwithstanding all the remedies which were tried. Dr. Gerner, supposing the cause of the affection to be a relaxed state of the mucous membrane of the trachea, at last cured the patient completely in three days by the inhalation of ammoniacal vapours, disengaged from a mixture of a solution of muriate of ammonia and carbonate of potass.—*Zeitschrift für die ges. Med. and Br. & For. Med. Rev.* 1839.

Influence of Temperature.—The reduction of temperature alone, when the atmosphere reaches the freezing point, is fatal to a certain numher of persons.

The tables of mortality, published at the General Register-office, for the last six weeks, afforded a striking illustration of this

principle; the weather, after having been wet and mild, grew cold rather suddenly, and the immediate result was an increase in the number of deaths registered from 860 to 1087.

The following were the numbers of deaths registered in the six weeks; and the temperature has been added from the tables kept at the Royal Society's rooms by Mr. Robertson, to whose politeness we are indebted for the observations :—

Week ending Saturday.	Number of Deaths registered.	Temperature.		
		Daily Mean.	Highest.	Lowest.
November 14th . .	885	48°	55°	41°
,, 21st . .	897	45°	61°	35°
,, 28th . .	862	42°	54°	33°
December 5th . .	1087	41°	55°	30°
,, 12th . .	1059	39°	45°	34°
,, 19th . .	1056	30°	40°	21°

The greatest increase was in the class of pulmonary diseases; but we cannot now enter into a full discussion on the influence of cold, and shall merely recommend the careful study of the detailed tables to our readers. Every disease presents some positive or negative fact of importance to the medical practitioner.

The old bills of mortality deserved little reliance in comparisons of this kind, for the returns were not made regularly; and it often happened that the deaths which occurred during a year in a particular parish were entered at once in the bill of a week. The standard of calculation and comparison was thus constantly disturbed, until it became no standard at all.

Science is therefore greatly indebted to the Registrar-General, for the publication of the series of weekly tables, which have been commenced and have been regularly continued during the present year. We have ascertained that not a single return has been omitted for any week from any of the one hundred and twenty-five metropolitan districts; so that the tables are comparable, and *indicate*, as will be observed, *any variation in the mortality, whether from the weather or epidemic influences, as accurately as the thermometer exhibits the temperuture."—Lancet.*

Chess and Phrenology.—[We are not quite satisfied that the subjoined paragraph, taken from a weekly London paper, contains a correct account of Dr. Elliotson's Phrenological Lecture on the cranium of De la Bourdonnais, but we have nevertheless thought right to submit it to our readers as a fair average specimen of phrenological reasoning. We have printed in Italics those passages which appear to us the most striking illustrations of the malleabillity of facts properly wrought on the anvil of the philosopher, and we congratulate the Society on their discovery of the utility of destructiveness in playing

chess, and the inutility of constructiveness in building.] Two interesting discussions have been held at the London Phrenological Society, Exeter Hall, on the cast of the head of M. De la Bourdonnais, lately taken by death from among us, which cast was produced after decease by Deville, of the Strand, the likeness being wonderfully preserved. Dr. Elliotson gave a phrenological description of the head, which, to those who knew the habits of the chess player under discussion, came remarkably home to the truth. As a phrenological specimen the cast presents qualities of the finest description; it is a head of greater power than the society sees once in seven years; the organs of constructiveness, stratagem, causality, and others bearing directly upon chess, are amazingly developed. Dr. Elliotson justly remarked, that such were the capabilities of the brain, deceased would have been first-rate in whatever scientific pursuit fate had embarked him. *His animal organs were, at the same time, prodigious, which gave that impetus to the mind which enabled him at chess to beat and tear down all opposition. As the general of an army De la Bourdonnais would have gone far; and enormous destructiveness may, perhaps, have been one of the leading motives which caused him to spend his life in chess; hardly any other pursuit, save actual war or brutal quarrelling, giving scope for its full exercise.* Dr. Elliotson's interesting lecture was followed by some remarks from Mr. George Walker as to the life and habits of De la Bourdonnais, fully corroborating the phrenological views of the scientific men who had previously gone into the subject. On Monday last, the cast of Sam. Scott, the diver's head, succeeded that of De la Bourdonnais, and here the organ of firmness appears to have been even preternaturally developed. It is only by discussion that truth can be elicited, and phrenology demands no more than fair play at all hands. We believe the cast of De la Bourdonnais's head is on sale yet at Deville's, Strand, and doubtless chess clubs will be glad to procure a relic so valuable. *Constructiveness, a quality so essential to chess, in which schemes are to be concocted and their several merits critically and exactly compared, is seen of immense size in the head of De la Bourdonnais, and it was not unfairly remarked at the Phrenological Society, that it bore some what upon the case that De la Bourdonnais lost his property in early life by a building speculation at St. Maloes.*

Observations on Diabetes: with Cases illustrative of the Efficacy of Ammonia, in the Treatment of that Disease, by George H. Barlow, M.A. & L.M.—The following paper is one of a kind that the improved state of modern organic chemistry is giving rise to. Hypothetical, perhaps, yet displaying theory based on science, and very superior even in its errors to the speculative spirit of the olden time.

Dr. Barlow observes, that the opinion of Sydenham is rather gaining ground, that diabetes is referrible to a derangement of the stomach and chylopoietic viscera, rather than to a perverted action of

the kidneys. This opinion he canvasses chemically and ingeniously, if not satisfactorily.

He quotes Müller for the purpose of shewing that the urinary secretions is "the means of carrying out of the system decomposed and effete animal matter, such as urea and lithic acid, (the essential components of the urine,) superfluous saline matters, and, either in an altered state or in their original condition, foreign matters which have accidentally entered the circulation." Dr. Barlow adds, that the urea and lithic acid, the essential components, are highly azotized combinations; whilst in the graminivorous mammalia the place of the lithic acid is supplied by hippuric acid, a substance containing little more than seven per cent. of nitrogen: so that, of the great depurating organs of the body, the office of the lungs appears to be, to separate carbon in the form of carbonic acid; the liver removes carbon, hydrogen, and nitrogen, but chiefly the former; so that it may be regarded as in great measure co-adjutive or supplementary to the lungs, but as having a superadded function of its own: the kidneys, again, separate carbon, hydrogen, and nitrogen, but principally the latter, (as well as superfluous water;) so that they are in some measure co-adjutive to the former, but have a superadded function of their own: the skin, again, is supplementary to all the rest, but particularly the kidney, and has an additional function of its own.

"Upon this view of the subject," he argues, "we should expect that the office of one of these organs may be wholly, or in part, performed by one or all of the others; and, accordingly, comparative anatomy teaches us, that in the different classes of vertebrate animals, the development of the liver increases in the same measure as the respiration diminishes; being at its maximum in fishes, at its mimimum in mammalia, and having its mean amongst reptiles: whilst we learn, from every day's experience, that when the bile ceases to be poured forth by the ductus choledochus, it makes its appearance in the urine.

"The presence, therefore, in the secretion of one organ of a substance more nearly allied in its elementary composition to that of another organ, should rather be ascribed to a defective performance of function in the latter, than a perverted action in the former; or, in other words, the presence of a highly carbonized product in the urine would indicate impaired function of any other excreting organ rather than of the kidney. Hence the *à priori* arguments to be drawn from the physiology of the kidney are opposed to the belief that the presence of sugar in diabetic urine is the effect of a morbid condition or action of the kidneys.

"Again, what is to be inferred in reference to this subject from the pathology of other morbid conditions of the urine? or what do other morbid products indicate?

"Not to encumber this communication, the object of which is more especially of a practical nature, with observations not bearing directly upon the subject before us, it will be sufficient for our purpose to re-

mark, that of all the other morbid contents of the urine, there are none except those which are component parts of healthy blood, the presence of which has been traced to disease of the kidney; consequently, the knowledge we possess of the pathology of other diseased conditions of the urine affords no *a priori* reason for ascribing the presence of sugar in the urine, which is never found in healthy blood, to disease of the kidney.

"Since, then, there is no antecedent probability, that the presence of sugar in the urine is the result of any lesion of the kidney; and since sugar has been detected in the blood of the subject of diabetes by Mr. M'Gregor, Ambrosiani, and Dr. Rees, (the latter of whom has proved that it exists in considerable quantities); it would be well to inquire how far its presence in that fluid is capable of accounting for the symptoms of this disease:—and first, as regards the urine.

"It appears, from the conclusion drawn by Woehler from his researches, 'that all soluble, and not gasiform matters, which do not suffer decomposition in the system, are got rid of by the kidneys;' whence it is evident, that sugar, being taken up into the blood, must necessarily appear in the urine. It has, indeed, been argued, that the quantity of sugar found in the blood of diabetic patients is not sufficient to account for the quantity in the urine. This objection can, I think, have little weight, when we consider how quickly many soluble substances, when introduced into the system, are expelled by the urine. Again, it appears that those matters which are prone to pass out of the system by any particular secreting organ are stimulants of that organ; as is seen in the stimulant action of the neutral salts on the kidneys; whence sugar, being present in the blood, and being separated from it by the kidneys, must necessarily increase the flow of urine.

"There remains one other condition of the urine to be noticed; namely, the diminished quantity of urea. This deficiency is, however, by no means certain; as it has been called in question by several very able chemists; amongst others, by Mr. Kane. It may not, perhaps, be satisfactorily made out, that urea is expelled in this disease in as large quantities as in health; but I think that it has been shewn that enough is separated to confute the opinion frequently expressed, that sugar is formed instead of urea. Indeed, I should be inclined antecedently to expect that it would be deficient in this disease; since nutrition and excretion being, in health, antagonist processes, it is not improbable that the diminution of the former by disease may induce a deficiency in the latter.

"It appears, then, that the presence of sugar in the blood is of itself sufficient to account for the abnormal condition of the urine."

The thirst and dryness of the skin may be ascribed to the drain of water from the diuretic action of the sugar; the hunger to the atrophy, the consequence of the depraved state of the blood. Then which is the erring organ? Dr. Barlow reasons thus:—

"The circumstance of the morbid ingredient being a highly carbonized substance, might at first lead to the belief, that either the lungs or liver, or both, were involved in its causation; and it is probable that they are more or less implicated: but the fact, that sugar

has been discovered by Mr. M'Gregor in the stomachs of diabetic patients in greater quantities than in health, even when such patients have been almost entirely restricted to an animal diet, affords a proof that the derangement in sanguification must take place when the nutrient fluid is in an earlier stage than that in which it is subject to the action of these organs; and that the primary disturbance may be traced to the primæ viæ. And here it would be well to reflect upon the product of digestion in health, and in this disease. I again quote the words of Müller:—'The end and object of digestion is, first, the solution of the food, since nothing can be taken up by the absorbent vessels which is not in solution; and, secondly, the reduction of the different ingredients into the most simple material of the animal processes, namely, albumen, which is found to be contained in the fluid resulting from the digestion of the food, partly in the state of solution, and partly in globules. The essential character of the digestive process consists in its not only effecting the solution of the food, but in its likewise annulling the peculiar properties which the nutritive matters may owe to the source whence they are derived; that is to say, in dissolving the food, and converting all into albumen.'

"In this disease, on the contrary, the saccharine particles of the food are not changed in the stomach; whilst the starch, which most articles of vegetable diet contain in considerable quantities, not having its peculiar properties annulled, and its proneness to the saccharine fermentation being favoured by the warmth and moisture of the stomach, is converted into sugar, which, being readily soluble, is absorbed into the circulation."

Thus, from some defect in the assimilating power, a lower product, starch, is found in lieu of a higher one, albumen. The former is inadequate to the purposes of the economy, and is eliminated by the kidney. It is not, however, actually proved that there is a diminished quantity of albumen in the blood, though that is probably the case. Let us turn to the remedial principles founded on the preceding views.

"The next inquiry is, what are the inferences to be drawn from it respecting the treatment of diabetes. The first is obviously one, the correctness of which has long been acknowledged, and confirmed by experience; namely, the avoidance of all saccharine and amylaceous articles of food; the latter of which, from their tendency to saccharine fermentation, are, I believe, productive of as much mischief as the former. I have, however, little to add to what is generally received upon this point, further than to insist on the advantages of the cruciferous vegetables as articles of diet; the use of which is not only in accordance with the view taken above, but has received the sanction of many experienced physicians. Not only do greens, broccoli, turnip-tops, sea-kale, water-cresses, &c. tend to obviate the loathing which is often felt by these patients when restricted to an animal diet, but they exert a decidedly beneficial influence over some of the symptoms: and it will be seen, in a case to be related presently, the discontinuance of the use of greens was always followed by increase in the flow of urine.

"The next indication appears to be, to introduce into the stomach a highly azotized substance, and at the same time, by a diffusible stimulant, to exalt, if possible, the assimilating powers of that organ; both which ends appear likely to be attained by ammonia.

"There is one circumstance connected with the employment of ammonia in this disease; upon which, however, I do not wish to lay great stress, although it is at least a coincidence too remarkable to be passed unnoticed;—I mean the chemical relation of sugar, ammonia, and albumen, as regards their elementary composition. Thus we find, that when the numbers which represent the atomic composition of ammonia and sugar are added in certain proportions, we obtain a result which exactly coincides with the numbers representing the atomic composition of albumen, increased by certain equivalents of carbonicacid and water, substances which are continually excreted from the body.

	Carbon.	Hydrogen.	Oxygen.	Nitrogen.
9 Eq$^{nts.}$ Sugar....	55.08	9	72	0
+1.1 Eq$^{nt.}$ Ammonia..		3.3		15.56
	55.08	12.3	72	15.56
—5 Eq$^{nts.}$ Water....		5	40	
—$\frac{1}{2}$ Eq$^{nt.}$ Carbonic Acid	3		8	
	52.08	7.3	24	15.56
Which, reduced to 100 parts, gives.....	52.63	7.37	24.25	15.73
Albumen (according to Gay Lussac & Thenard)	52.88	7.54	23.87	15.70"

Dr. B. has found that under the use of the sesqui-carbonate of ammonia the function of the skin is generally restored; though he has sometimes thought that opium assisted in effecting this result. Such exercise as the strength of the patient will enable him to take, and the use of a warm bath occasionally, where it can be obtained, are also valuable adjuvants. The accumulations which not unfrequently take place in the large intestines are best removed, he thinks, by a purgative with a tonic—rhubarb and sulphate of potass, aided, if requisite, by castor oil, are preferred by him.

Dr. Barlow relates five cases. We shall select the first as a sample, and perhaps a favourable one, of the whole. For the remainder are unfortunately far from conclusive as to cure, though conclusive enough as to benefit. They resemble many other cases, treated by many other remedies, that have been from time to time brought forward with the flattering anticipation of more decided and permanent advantage than has been obtained. We fear that we can hardly dare to look to a diffusible stimulant, as a means of a class that *must* have been often tried by doctor and patient, for victory over so intractable a malady. But to the case.

Case I.— ——Stanley, a shoemaker, applied to me, at the Sur-

rey Dispensary, in the summer of 1836; stating that he had been told that he was the subject of consumption, having lost flesh and strength very rapidly for about a month. I accordingly examined his chest; but could detect none of the physical signs of phthisis. Upon further inquiry, I learned that he had for some days been struck with the great increase in the quantity of his urine, which amounted to fifteen pints in the twenty-four hours. He was, moreover, much emaciated; his skin was very harsh and dry, which he told me was the case by night as well as by day: his tongue was loaded: he complained of great thirst; and said that his appetite was excessive. His urine was sweet to the taste, and of sp. gr. 1.041. He was at first put upon the use of one grain of opium every four hours; some castor oil being ordered occasionally, to regulate the bowels: the rules respecting diet, above laid down, being also enjoined.—At the end of five days his urine was much diminished in quantity; but the specific gravity increased to 1.044: he was also at that time in a state of great prostration, which was, perhaps, in some measure attributable to the opium. He was then ordered to take six grains of the sesquicarbonate of ammonia three times a day, in a draught containing one drachm of sp. lavend. comp.; and five grains of Dover's powder every night; by continuing which, the quantity of the urine was, at the end of eight days, reduced to twelve pints in twenty-four hours, and the specific gravity had decreased to 1.035; he also perspired moderately at night, and the thirst was much abated. I now increased the quantity of the ammonia to eight grains every four hours; under the use of which, the quantity and specific gravity of his urine rapidly diminished; and at the end of six weeks he had so far recovered his flesh and strength, that he considered himself well, and left the Dispensary. At the end of five weeks, however, he again presented himself; stating that his former symptoms had returned. His skin was then harsh and dry; and he told me that his urine rather exceeded two gallons in twenty-four hours. He had lost flesh considerably since I had last seen him; but he was not so much emaciated as when he first came under my care: his tongue was clean, but moist, and his breath had the odour of hay. He was treated in the same manner as before; and at the end of two months he was again discharged, apparently in good health; his urine being about three pints in quantity, without saccharine taste, and of specific gravity 1.020.—I ascertained that this man was in good health in the summer of 1839."

Dr. Barlow has our thanks for his Paper. It deserves consideration.—*Medico-Chirurgical Review*, January, 1841.

Arsenic in Sulphuric Acid.—To the Editor of the Medical Gazette.—Sir, Having been recently engaged in some toxicological experiments, I was surprised by observing that the sulphuric acid employed contained arsenic in considerable quantity. The acid had been purchased of an operative chemist in this city; the price eight pence per pint, which is the sum usually paid for pure acid;

the more expensive at four shillings and six-pence per pint being rarely required, even by analytical chemists. The quantity of white arsenic (as deduced from the weight of the sulphuret) in 20 fluid oz. of this eight-penny acid was 22·58 grs., a degree of contamination which becomes a matter for most grave consideration, when we reflect how many of our most common remedies are prepared with sulphuric acid. I may mention sulphate of magnesia and muriate of ammonia, the latter of which can scarcely escape contamination, if an arsenical sulphuric acid be employed. I lately obtained from Apothecaries' Hall a specimen of acid at eight-pence per pint, and found it to contain even more arsenic than that which I have mentioned above. The acid, however, sold by the company at four shillings and six-pence per pint yielded no distinct evidence of the metal. It appears almost certain that there is a great abundance of arsenical acid in our market at present, which may probably be attributable to the use of pyrites instead of Sicilian sulphur in the manufacture of acid —the high price of the latter article having provoked competition. I have recently examined specimens of hydrochloric acid, and found them arsenical, but in far less degree than the sulphuric. I should not have published these observations until I had made further experiments on other articles used in medicine, for the preparation of which sulphuric acid is necessary ; but the important nature of the subject has prompted me to take the earliest opportunity of communicating these first results. It has been long known that arsenic exists in minute quantity in some varieties of acid, though that from the English market has been regarded as particularly pure. I am not aware, however, that the startling quantity of 22·58 grains in a pint has ever been suspected to exist in any acid whatever.

I am Sir, your obedient Servant,

Feb. 3rd, 1841. G. O. Rees.

P.S.—I may mention that arsenical candles are again in the market; it is only to-day that, from the symptoms observed in several individuals of one family, I was induced to examine the candles in use, and obtained from them a considerable quantity of arsenic.

New and successful Method of treating Disease of the Prostate Gland, by W. Henderson, M.D., Perth.—On the 1st of June, 1840, a gentleman consulted me under the following circumstances. About four years ago he first felt a more frequent desire than usual to void urine, accompanied with more or less pain, and followed with frequent slight mucous discharge from the urethra. He was then in London, and the medical gentleman whom he consulted treated the complaint as gonorrhœa. He shortly after that left London, but, impressed with the idea of the alleged nature of his disease, he continued to take all sorts of medicine, known and secret, without any abatement of his sufferings.

When I first saw him, he felt an almost constant desire to empty the bladder, often passing only a few drops of urine at a time, accompanied with much pain and pressure; occasional severe lancinating pains at the neck of the bladder, which extended throughout the urethra, and were most distressing at the point of the penis; priapisms and emissions during sleep, followed with extreme heat and pain, constant mucous discharge from the urethra; bowels confined; much uneasiness in passing the fæces; a sensation as if some hard substance were pressing from within against the verge of the anus, which no effort to empty the bowel could remove. Sitting for any length of time on a hard seat causes a deep-seated, heavy pain at the neck of the bladder; heat and excoriation at the verge of the anus on taking even moderate exercise on foot, and he cannot ride on horseback at all from the pain it occasions.

On introducing a catheter, to ascertain whether stricture existed, the instrument passed freely until it reached the prostate gland, where there was obstruction and much pain in passing it into the bladder. I then examined the gland with the finger through the rectum; it was much enlarged, and painful on pressure.

The ordinary means, viz., aperients, iodine, leeches, and counter-irritants on the perinæum, were persevered with for four weeks, with scarcely any alleviation of the patient's sufferings, and no progress whatever made in reducing the size of the gland.

While pondering on this most distressing case, it occurred to me, that if I could manage to apply leeches upon the gland, through the rectum, they might have a good effect. Accordingly, I had a tube made of tin, a quarter of an inch wide at one end, and half an inch wide at the other end, bent into the form here represented. I then cut down the wide end of the tube about a third part of an inch, two-thirds of its diameter, in front, corresponding with the bend, leaving the projection behind as a handle to enable me to guide the other end accurately, and keep it steady after it had been properly applied. Having just had the bowel freely emptied, I cautiously introduced the tube, so directed, that by pushing it up in a straight line, its mouth must pass over the centre of the right lobe (the tenderest part) of the gland. As the tube advanced, I made gentle lateral pressure with its projecting point, at the distance of about every line, until the patient experienced a sensation somewhat similar to that felt when the point of the finger was pressed against the most sensible part of the gland. I then secured the tube gently, but steadily, with the left hand, and with the right hand introduced a leech into it, which, I was not a little pleased to find, took readily. When this leech dropped off, I changed the position of the tube, so as to place

the mouth of it over the left lobe of the gland, and then introduced another leech, which also took readily.

When the tube was withdrawn the blood accumulated in the rectum, and brought on a desire to evacuate the bowel; this was frequently the case; but, from the feculent matter with which it was mixed, the exact quantity could not be ascertained, but it was considerable. This application of the leeches was followed with great relief to the patient; the priapisms and emissions by which he had been so long harassed and weakened entirely ceased, and all his other symptoms were much mitigated. The aperients and iodine were continued. A week after the leeches were again applied, and acted equally well. After this, the pressure on the sphincter ani, and desire to empty the bowel, were scarcely at all experienced; and the mucous discharge from the urethra altogether disappeared. The only uneasiness which he now felt was the heat and lacinating pains in the gland and urethra, particularly at the point of the penis, which were occasionally a little troublesome. Two days after the last application of the leeches, I examined the gland with the finger, through the rectum; it was now greatly reduced in size, and pressure upon it gave very little uneasiness. Six days afterwards, the heat and pains in the gland and urethra being still occasionally felt, an attempt was again made to apply the leeches as formerly, which failed. When the tube was withdrawn the cause of the failure was manifest, the introduced end of it being quite filled up with feculent matter. Something had occurred to prevent the patient from taking his aperient at the usual time, and his bowels had not been properly relieved. A similar occurrence was guarded against on the following day, when the leeches acted well. The relief which the patient experienced was now so complete, that, except continuing the aperients and iodine, nothing more was done for two weeks, when I again examined the gland. It had now decreased to about the natural size, but pressure on the right lobe still gave a little uneasiness. On this part one leech was again applied, which acted well.

At the end of other two weeks, I again examined the gland, through the rectum, and a perceptible degree of tenderness still remaining when pressure was made upon the right lobe, one leech was once more applied upon it, which, after a little manœuvring, acted well.

From that time the patient has continued well, and was some time ago married to a lady to whom he had been long attached.

So far as I know, this is the first time that leeches have been used in the manner above pointed out, for disease of the prostate gland; and if, in the hands of other gentlemen, this mode of applying them shall prove as beneficial as it has been in mine, it will, in a practical point of view, be an improvement of no small value; for it is well known to the profession, that there are few structures in the human body which occasion more trouble and anxiety to the medical attendant, or which are more painfully harassing to the patient, than the prostate gland when in a dieased state.

In thus applying leeches, the most essential requisite is to have the

rectum well emptied of all feculent matter immediately prior to their application; for if this should be neglected, the operation will be foiled in his endeavours to make them take.

Another point which requires attention is, the close application of the mouth of the tube to the parietes of the rectum over the diseased portion of the gland; because if this be not carefully attended to, the leech may pass through the tube into the bowel. This actually happened in the above case, and occasioned some anxiety to myself, and much alarmt o the patient; but, fortunately, no unpleasant consequence followed, for in about eight minutes after its passage through the tube, the leech made its escape through the spincter ani.

The tube should be cautiously introduced with its mouth directed over that portion of the gland on which the leech is wished to be put, when lateral pressure should be made with the end of the tube against the gland, to ascertain the most sensitive point. This can be easily found by pushing the tube either a little higher up, or drawing it a little lower down in the rectum, and making lateral pressure at the distance of every line, until the patient experience a sensation somewhat similar to that produced when pressure with the point of the finger is made upon the gland. Having found this spot, the tube is then to be held steadily with the left hand, and a leech introduced into it with the right hand, when, if the rectum have been properly emptied beforehand, it will be found to take readily. When the first leech drops off, if another be wished to be applied, the mouth of the tube should then be moved a little round either to the right or left, as the case may require, so as to make a fresh wound, and another applied in the same manner. If the heat of the tube cause the leech to become refractory, by pushing the corner of a towel into the tube so as to force the leech up to his duty, I invariably succeeded in making it take.

This practice is rational, free from danger, and, with a little address, easily executed, and in this case, has been eminently beneficial.

Should any of my professional brethren do me the honour to repeat this experiment, I should esteem it a special favour if they would take the trouble to communicate the degree of success which may attend it, either through the pages of *The Lancet*, or to me personally by letter.—*Lancet.*

On the external and internal Use of Veratrine.—The principal action of this very potent substance seems to be on the spinal marrow; for, soon after it has been swallowed, the person begins to experience a dull burning pain in the sacral region, various uneasy feelings through the abdomen, increased watery and slimy evacuations from the bowels, but rarely any diuresis. If its use be still continued, it causes dryness and a sense of burning in the mouth, intense thirst, nausea, vomiting, bloody stools, coldness of the limbs, trembling, syncope, delirium, and paralysis: the urine is unusually scanty,

thick, and of a deep red colour. The surest antidote to these symptoms is strong coffee with lemon-juice.

The veratrine, endermically used by sprinkling half a grain on the epigastric region deprived of its epidermis, excites nausea, sense of tightness in the chest, electric-like dartings through the chest and abdomen, and painful twitchings in the limbs. In some cases of palsy it has been used with decided advantage; but, as it is certainly inferior to strychnine, we can generally dispense with it. The best mode, however, of using the veratrine is friction with an ointment containing from ten to twenty grains, rubbed up with an ounce of lard: its peculiar electric-like local effects are most easily obtained in this way. It has been used with excellent effects in all forms of purely-neuralgic suffering, especially in *hemicrania*, *ischias nervosa*, *neuralgia facialis*, *asthma*, *convulsions*, and in some most excruciating neuralgiæ arising from calculus in the kidneys:—in many cases, combined with the extract of belladonna, it is still more efficient.

Another effect of veratrine is the excitation and regulation of anomalous actions (thätigkeitsauserungen) of the nerves proceeding from the spinal marrow. If an ointment, composed of from two to four grains and an ounce of lard, be rubbed along the spine, twice a day for five, six, or eight weeks, much relief will often be experienced in weakness of the lower limbs, (especially if this has been the effect of seminal irregularities,) in rheumatic pains, in debility of the bladder and sphincters, in menstrual cramps,* in convulsive affections of the urinary organs, in suppressed hæmorrhoids, in pertussis, and probably also in diabetes mellitus. Dr. Reiche, the writer of these remarks, has never observed that the veratrine has any diuretic effects; although he has certainly found that many of the distressing symptoms of hydrothorax and hydrops-pericardii are much relieved by its external use. That it exerts emmenagogue powers cannot be disputed. It seems also to stimulate the absorbent vessels of the part, and it has therefore been used with advantage in the dispersion of some subcutaneous tumours.

In a subsequent article taken from the *Medicinish Zeitung*, there is reported a case of severe intermittent neuralgia of the frontal nerves, which, after resisting the internal use of quinine and other remedies, yielded at once to the application of veratrine ointment, two grains to the drachm of lard, to the forehead, previously denuded by a blister of its epidermis. The effect was most rapid and well marked.

On the Seat of Gonorrhœa in Women.—M. Gibert, in a memoir recently read before the Academy, thus expresses his opinion: ..... "In woman, as in men, the seat of election of blenor-

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* Some English practitioners have of late recommended frictions with veratria ointment over the sacrum as a sovereign remedy in certain intractable cases of dysmenorrhœa. We have no experience of it ourselves; but we are in the daily habit of using the belladonna plaster in such cases with admirable effect.—(*Rev.*)

rhagia is the meatus urinarius; but in all the cases, where we have been able to use the speculum, we have observed, at the same time, a uterine discharge co-existing with the urethral flux, and usually remaining for a length of time after this (the latter) has ceased; so that, in my opinion, we must regard the cervix uteri as the principal source of the blenorrhagia in women.

Several modern writers, deceived by a superficial observation, have most improperly designated the disease by the term of vaginitis. Now in a large majority of cases of gonorrhœa, the vagina remains unaffected (*etranger*), and if it occasionally is found to be reddened and inflamed, this is only temporary, and speedily subsides by rest and cleanliness. It is only in rare and exceptional cases that we observe a milky or puriform discharge proceeding from the mucous membrane of the vagina. On the contrary, in every woman, who has contracted gonorrhœa, there exists during the first two or three weeks a characteristic flow of pus from the urethra; and subsequently a discharge comes from the cavity of the cervix uteri, and this usually lasts for a length of time after the urethral discharge has ceased, and ultimately cannot be distinguished from ordinary leucorrhœa or fluor albus." .....

"Out of 206 cases of gonorrhœal flux in the wards of our hospital of Loureine, a great many of which were of several weeks' standing at the time of their admission, we have been able most distinctly to make out the presence of urethritis in 88, and the presence of any affection of the vagina in forty cases only; and, no doubt, the number of the former wonld have been much larger if the examination had taken place at an early period of the disease; while in reference to the latter number it is to be observed, that in many of the cases the redness of the vaginal mucous membranes very quickly disappeared.—*Medico-Chiurgical Review*, January, 1841.

On the Origin of Cancer in the Veins.—Dr. Langenbeck, of Gottingen, informs us, that he has been led by numerous microscopical examinations of diseased tissues to the belief that the seat of cancer exists very frequently in the venous system. He is however not ready to assent to M. Cruveilhier's opinion, that cancer is in every case developed primarily and essentially in the veins. In two cases of cancer of the uterus, followed by cancerous formations in the lungs, he found within the pulmonary veins carcinomatous matter—recognizable with the microscope by its peculiar cellular form—either free, or adhering to the parietes of the vessels. The molecules of the cancerous matter, carried along in the venous stream, may be arrested at any point, and there become developed, and acquire an increase, just in the same manner as any other organic molecule which, under a cellular form, is augmented in volume—as proved by the observations of Müller, Schwann, and other physiologists on cellular productions (êtres) of the vegetable as well as of the animal kingdom.

The cancerous elements may find their way into the circulating fluid in three different ways;—either they may be engendered in

the blood itself, and, being carried along with it, are at length stopped at some point where they become developed; or a cancer may be formed in some of the solid tissues, and a portion of the fluid with which it is impregnated becomes absorbed by its veins or lymphatics, and is thus conveyed into the circulation, giving rise ultimately to the formation of new cancerous growths; or, lastly, cancers already ulcerated may corrode the veins or lymphatics of the part, and thus the cancerous cellules (which are each of them germs of new cancers) may be introduced into the current of the circulation.

The author admits that he has not been able to demonstrate experimentally in any case the primary formation of cancerous cellules in the blood; but, judging from numerous microscopical examinations of the blood in persons already affected with cancer, he thinks that such development is highly probable.

As to the second and third modes of explanation, it is to be remembered, that the internal surface of veins, which arise from any organ affected with cancer, is very generally found corrugated, and more or less morbidly altered; thus the disease is apt to be developed in the veins of the liver, if the primary evil has its seat in the extremities of the vena portæ; and in the veins of the lungs, when it is *en rapport* with the two venæ cavæ.

In two cases of cancer of the uterus, the author has seen, within the veins of the pelvis, the cancerous matter of Cruveilhier under the form of minute grains or cellules of coagulated fibre of about double the size of pus-globules. In the blood, in the iliac veins also, as well as in the interior cava and the right cavities of the heart, there were observed here and there, by means of the microscope, cellules inclosing nuclei of a yellowish colour, and numerous granules like those which were found in the pelvic veins; in the capillaries of the lungs, too, the carcinomatous granules were very abundant, and were more adherent to the walls of the vessels than elsewhere; and in the pulmonary parenchyma itself new cancerous foci were discovered. In reference to these facts, the author makes the curious remark, that "the cancerous germs or cellules transported to another organ are there developed into a voluminous cancer, just as the germ or ovule of the ovarium, when conveyed into the uterus, becomes developed into the fœtus." In short, he looks upon the cellules of cancer as veritable organized beings, which only require to be fixed in a suitable place to develope and multiply themselves; and he therefore so far agrees with those writers who have designated cancers "parasitical tissues."—*Schmidt's Jahrbucher.*

Treatment of Fissures of the Anus with Rhatany Injections.—M. Brettonneau, the celebrated physician at Tours, seems to have been the first who tried and recommended the use of injections of a strong decoction of rhatany root in cases of that very troublesome and distressing complaint, fissure of the anus. Constipation is in most cases the cause of the malady, and also the chief impediment to its cure. Now, such a state of bowels is very frequently accompanied with a great dilata-

tion of the rectum, especially of that part of it immediately above the sphincter ani. In this dilated portion of the gut the feculent matters are apt to accumulate, and there form an immense hardened mass, the evacuation of which often gives rise to excessive pain, almost as severe as that of child-birth. M. Brettonneau, by attending to these circumstances, came to the conclusion that the enfeebled and dilated state of the bowel might be most effectually cured by the use of topical astringents, applied directly to its surface. For this purpose, he used a solution of the extract of rhatany in water, to which some of the tincture of the same was added. Several patients who had for long suffered both from constipation and from fissure of the anus, were cured of both these complaints by using the rhatany injection. But it is not only in those cases of fissure of the anus, which are accompanied with a confined state of the bowels, but also in many other cases, that a cure has been effected with the remedy.

M. Trousseau writes: "within the last few months, I have treated five cases with this malady; of these four have been cured. M. Marjolin has also succeeded in one case, and M. Berard in two. My plan of using it is to order the patient to take an aperient enema every morning, and half an hour afterwards an injection made of a strong decoction of rhatany root, which he should endeavour to retain; this injection should be repeated in the evening: when the pains attending the act of defecation become abated, one injection in the course of the twenty-four hours will be sufficient."—*Journal des Connaissances, &c.*

On the Properties of Indian Hemp.—[The following notice of the properties of Indian hemp is taken from a new periodical, the Edinburgh Monthly Journal of Medical Science, edited by Doctor Cormack; the two first numbers of which we have received and read with much interest and profit.]

Dr. O'Shaughnessy on the Indian Hemp.—Indian hemp, or Gunjah, (*Cannabis Indica,*) has long been known in the East as an intoxicating drug of great power, and has been much used as a means inducing a state of pleasurable excitement, as well as a condition of aphrodisia. It would appear from some experiments lately published in a small pamphlet lately published by Dr. O'Saughnessy of Calcutta, that in this drug we possess a narcotic of great value in many obstinate disorders. According to Dr. O'Shaughnessy, the plant is identical with *Cannabis sativa,* and probably owes its specific quality to the influence of climate.

The officinal part is a resinous exudation from the tops of the plant, and is prepared by digestion in spirit, and evaporation at 212° F. The extract so prepared has somewhat the appearance of dark, impure scammony in mass. A convenient tincture is obtained by dissolving gr. iij. of the extract in ʒj. of proof spirit. The dose of the tincture is from gr. x. to ʒj.—the smsller doses acting as stimulants, the larger as powerful sedatives.

The drug has been used by Dr. O'Shaughnessy in the following cases:—

Acute and chronic rheumatism, in half-grin doses, with marked effects of diminished pain, increased appetite, aphrodisia, and great mental cheerfulness, with apparent acceleration of the cure. There was never either delirium, or consequent headache, or nausea.

In cholera, the hemp resin was employed with the best effects in checking the diarrhœa, and restoring the heat of the surface. The dose, in these cases, was half a grain, and the action of the remedy was evident in about twenty minutes.

In a case of hydrophobia, although no cure was effected, the distressing symptoms were much relieved by the use of the drug in the solid form, gr. ij. being administered every hour.

In tetanus, the gunjah was used in large doses at intervals of from three to six hours, and with marked good effect.

In a case of infantile convulsions, full doses induced narcotism, and abatement of the fits. The child recovered.

The antidote against an over use of the gunjah are emetics, bleeding, blisters to the neck, and saline purgatives.—*O'Shaugnessy on Indian Hemp, Calcutta*, 1839.

On the Use of Indian Hemp, and other Remedies, in Plague.—We find the following interesting note appended to p. 41 of Dr. Forbes' Prize Thesis on the Nature and History of Plague.

"The following is an abstract of the results of the treatment employed by Dr. Aubert, during the Alexandrian plague of 1835, chiefly at the Arab hospital of Rás el Tín, and the European hospital, in conjunction with the late courageous and enthusiastic Rigaud. Of forty-four patients submitted to simple (dietetic) treatment, there died, five Europeans, five Turks, and three Negroes, while the rest, all Arabs (31) recovered. In fifty-three cases treated by bleeding and antiphlogistics, ten Europeans, thirteen Arabs, three Negroes, and one Turk died; while twenty-one Arabs and five Europeans recovered. Emetics were chiefly employed in seventeen cases, of which, four Europeans and four Arabs died, and eight Arabs and a European recovered. Seven cases were treated with half-grain doses of phosphorus; of these five Arabs recovered, and an Arab and European died; the phosphorus appeared to some to induce *enteritis*. The actual cautery was applied over the spine in twenty cases, in the last stage of the disease, and, as a *dernier ressort*, but, as might be expected under such circumstances, only two Europeans and three Arabs recovered. Of eleven severe and almost hopeless cases, in which Hashísh was employed, seven recovered, but in some bleeding was necessary to subdue *pneumonia*, apparently induced by that remedy. The Hashísh is an extract variously prepared from the hemp, or *Cannabis sativa*, and known in India by the names of Bháng, Sabzeh, or Gánjhá; it has been used from time immemorial all over the east, as a substitute for opium, in producing intoxication. From the use made of it by the followers of Hasan Sab'a, to induce the state of frenzy in which

they committed their murders, they received the name of *Hashíshín* corrupted by the Franks into *assassins*. By the last accounts from India, it would appear that Dr. O'Shaughnessy has employed the Hashísh with success, in *cholera spasmodica*, in the form of tincture; it is beyond doubt a most powerful remedy, and may become a very valuable one.

"Since the above was written, I have had an opportunity, through the kindness of Professor Christison, of seeing Dr. O'Shaughnessy's pamphlet on the *Cannabis Indica*. The account there given of the physiological action of the Charras, or resin of the plant, agrees in most particulars with M. Aubert's description of the effects of the Hashísh. It produced increased quickness of pulse, determination of blood to the surface, bulimia, uncontrollable laughter, and a succession of vivid and pleasurable ideas, aphrodisia, loquacity, and sometimes catalepsy. It appears to have been of service in epidemic cholera, but its most striking remedial effects have been observed in traumatic tetanus, and infantile convulsions; a majority of the cases of tetanus in which it was employed having terminated in recovery."—(*Forbes*, p. 41. *Edin.* 1840.)

On the Use of Indian Hemp in Barbary.—We had an opportunity of trying the physiological effects of Indian hemp upon ourselves, and to a certain extent of witnessing them in others, when recently residing at Tetuan in Barbary. The Moors are said to use the drug to a very great extent as an aphrodisiac, and among the Jews we ascertain that it was taken secretly by very many as an excitant to venery. Some take it in powder with a little water, others smoke this powder in very small pipes; but the better sort prepare a costly conserve with opium, and various sweets, the dose of which is a teaspoonful. We never experienced more than slight increase of the pulse, quickness of ideas, and pleasant sensations, either from smoking or swallowing the powder, but the sweetmeat had a much more powerful effect, producing giddiness and pain in the back of the head. The powder is made from the leaves, and the conserve from the seeds. The more strict of the Jews consider it as a great sin against their religion to take the "*kief*"* in any form. Sterility among the women, and impotence among the men, is exceedingly common in Barbary, as we discovered from various applications for advice from those who wished to have these defects remedied. It is very probable that this state of matters is caused by abuse of venery caused by indulging in "*kief*." Inflammation is excited very possibly in the Fallopian tubes, which may terminate in effusion of lymph, and obliteration of these canals, and thus effectually prevent conception. In the dissecting-rooms, we have observed the Fallopian tubes of prostitutes glued up in this way, which leads us to believe that this state, or inflammation of these vessels, is the cause of the sterility so prevalent among prostitutes in all countries, and other women generally in Barbary. At a venture we would say, that one out of every twelve of the married

* So they call the Gunjah. The word means *enjoyment*.

Jewesses in that country, are either barren, or have only borne one child. This can hardly be supposed to arise from any structural defect, for they are perhaps the most beautiful and most correctly developed women in the world.

Cases and Observations illustrative of the Mercurial Treatment of some Forms of Incipient Phthisis Pulmonalis, by William Munk, M. D., Physician to the Tower Hamlets Dispensary.—The idea of employing mercury as a curative agent in the early stage of some forms of phthisis pulmonalis, occurred, we are informed, about the same time, and without any mutual communication, to three of the most distinguished physicians of the Irish capital. These were, Sir Henry Marsh, Dr. Graves, and Dr. William Stokes. The two latter of these gentlemen have laid before the public some of their earlier experience on this interesting subject. The first communication which appeared was from Dr. Graves, and is contained in his published clinical lectures, whilst the experience of Dr. Stokes will be found detailed in his excellent treatise on the Diagnosis and Treatment of Diseases of the Chest. The results of this practice in the hands of Sir Henry Marsh are not, so far as we know, yet before the profession. Dr. Corrigan, more recently, in a very interesting lecture, has pointed out the class of cases, and the stage, in which this mode of treatment is admissible.

Before entering further on the subjuct, it may be well to give a sketch of the circumstances which have led to this mode of treatment, and, in so doing, I shall avail myself of the words of Dr. Graves, offering no apology for the length of the quotation, the interest attaching to the subject seeming to me a sufficient reason for so long an extract. After speaking of the effects of mercury in some inflammatory affections of the joints, and in some forms of inflammation of mucous membranes, the Queen's Professor goes on to say: "This puts me in mind of a plan I have adopted within the last year, in the treatment of certain diseases of the lung, and on which I shall make a few observations, as it has not been spoken of by those who treat of the cure of pulmonary affections. I must here in justice confess that an idea of this plan of treatment is not solely mine, but was founded on an analogy derived from the researches and experiments of Dr. O'Beirne, on scrofulous inflammation of the joints. An extensive experience and deep reflection first led Dr. O'Beirne to think that the acute stage of scrofulous inflammation of the hip and knee joints might be made amenable to active and energetic treatment; in other words, that inflammatory affections of the joints, which terminate in some of the worst and most fatal forms of disease, namely, morbus coxæ and whiteswelling, might be checked *in limine*, and before the stage of hopeless ulceration was established. He, therefore, proceeded boldly and at once to try whether the disease might not be arrested in the commencement by rapid mercurialization. Observe, gentlemen, the idea was completely new; it had never occurred to any other person, and

was diametrically opposed to the theories of the day. The prevailing opinion on this subject was, that mercury was inadmissible, and could only produce mischief in persons of scrofulous diathesis. Every one said, do not give mercury in such a case it exasperates scrofula; it even brings on scrofula in many instances where there had been no appearance of it previously. You can do no good with it, but may do infinite mischief. Dr. O'Beirne, however, knew the difference between the proper and improper exhibition of mercury—between mercurializing the patient at once and fully, and then stopping, and the pernicious custom of giving long and irregular courses of mercury. He tried the remedy and succeeded, and the surgeons of Europe have justly appreciated the value and importance of this discovery. About two or three months before Dr. O'Beirne made his discovery public, I had translated for the Dublin Medical Journal a paper from a German author on the use of corrosive sublimate baths in the treatment of white swelling, and Dr. O'Beirne states that the publication of this paper gave him courage at the time in pursuing a plan of treatment so much at variance with the opinions of the day. I published this paper, however, at the time, merely as a curiosity; it was a novelty in practice, of which I had no experience, and could not offer any explanation. This was reserved for Dr. O'Beirne. He has shewn in his memoir on the subject, that if you give mercury so as to affect the system rapidly, you will frequently succeed in curing the disease, particularly in the commencement. From this I was led by analogy to apply the same principle of treatment to incipient scrofulous inflammation of the lung, and I think I have often succeeded in checking at once this most formidable of human maladies."*

The results of this practice, as hitherto published, are as follow. Dr. Graves states in general terms that he could mention many cases which have been treated successfully on this plan, and then proceeds to particularize three in which its action was manifestly curative. It failed, however, in two cases in which he had confidently expected benefit. Dr. Stokes mentions six cases in which he made trial of the mercurial treatment. In two of these a permanent recovery ensued. In two, temporary, though well-marked relief, was experienced. In one instance it was useless, and in another the medicine manifestly disagreed. Dr. Corrigan narrates but one case, yet this is decidedly in favour of the treatment, for the patient speedily recovered. Exclusive, then, of the experience of Sir Henry Marsh, who is reported by Dr. Graves to have found this mode of treatment beneficial, there are for reference twelve cases. In six of these a cure resulted, in two considerable benefit, in three it was useless, and in one the medicine disagreed.

Small as is this experience when numerically considered, and insufficient as to the decision of a point so completely at variance with the doctrines of the schools, it nevertheless appears to us that

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* London Medical Gazette, vol. xx. p. 339.

the evidence above adduced, coming as it does from persons so well qualified to form an opinion on the subject, has attracted far less of attention than its intrinsic importance legitimately demands: out of twelve cases of a disease so uniformly fatal as phthisis, there have, under a new and peculiar mode of treatment, been six cures. This will probably to many persons be a startling assertion; and I have therefore, before making it, been careful to state distinctly from what sources the information has been derived.

On investigating the pathological condition to which the observations of the authors above quoted refer, we shall find that conclusions as to its nature and seat must be based almost wholly on the general symptoms and physical signs; post-mortem examinations serving our purpose but little, inasmuch as few cases prove fatal at this period of its course. These circumstances combined make necessary a large amount of observations before any certain conclusions can be obtained; and they tend, in no inconsiderable degree, to render doubtful to many members of the profession the opinions maintained by those who have given attention to the subject, whilst they no less cause the treatment pursued, and the success which is stated to have resulted therefrom, to be regarded with some degree of suspicion. This is, perhaps, but an illustration of that salutary caution which, within certain limits, should mark our conduct in reference to new views and novel modes of practice hence derived, more especially when, as in cases like the present, many of the arguments are deduced from negative rather than from positive facts.

The form of disease now under consideration very commonly attacks individuals in tolerable or even apparently perfect health, although, if their previous state be minutely investigated, it will, I believe, in such instances, be found that there exist more or fewer indications of deterioration of habit, in the shape of scrofulous cachexia—whether that be of hereditary origin, or has been acquired by error in some of the non-naturals. Its commencement is, in the majority of instances, sudden and well marked; its immediate exciting cause clearly ascertainable, being in general owing to the application of some of the common causes of inflammation; or it originates, as do other local inflammatory affections, during the course of fever, of the exanthemata, influenza, &c. The phenomena attending it are those which point to a lesion of the bronchial mucous membrane, pulmonary parenchyma, or, as is most frequently the case, the two combined; that lesion being evidently inflammatory in its character, as evinced by pyrexia, and by the existence of the physical signs and general symptoms of bronchitis and pnemonia.

The disease, in its most frequent form, commences after the manner of a common catarrh. The patient having been exposed to moisture, or a low temperature, often the two combined, experiences a sensation of chilliness, which may augment to actual rigors. These are attended by languor, and indisposition to bodily or mental exertion, pains about the back, and aching of the limbs; to which succeed heat of skin, increased frequency and

strength of pulse, thirst, and a more or less unnatural appearance of the tongue. The respiratory organs evidence disorder; the voice becomes somewhat altered; irritation is perceived about the larynx, giving rise to frequent, dry, and irritative cough. As the case proceeds soreness is experienced beneath the sternum, a sense of tightness across the thorax; more frequent cough, which either then, or within a short period, is accompanied by expectoration, at first of a watery, saline, and irritating character, but which soon mellows down into a clear, tasteless, viscid fluid, scanty in quantity, and expelled with some difficulty. In other cases the expectoration presents characters different from those just mentioned; it is more abundant, brought up with ease, and, in lieu of being clear and tasteless, is opaque, sweetish, and pus-like. These symptoms, individually or collectively, may be more or less severe; they do not, in the majority of instances, arrive at such a height as to induce the individual to place himself at this period under medical care. The indisposition is looked upon as a common cold, perhaps more than ordinarily severe. Yet it is subjected at this time to domestic remedies alone. Should the practitioner, however, have an opportunity of examining a case at this period, he will find bronchitic rales over more or fewer parts of the chest, existing perhaps only, or at any rate greatly preponderating, in the apex of one or both lungs. After continuing for an uncertain period these symptoms undergo modification; some may altogether disappear; but in general a diminution of severity is alone experienced. The patient from hence, flatters himself that he is improving; but the speedy addition to the category of symptoms of no mean import, dispel the illusion, excite fears as to the indisposition, and cause him then to seek professional advice. There is emaciation and loss of strength; the phenomena of common pyrexia merge into or are changed for those of hectic, among the symptoms of which rapidity of pulse and morning perspirations will be found the most marked. There is severe and harassing cough, with or without a viscid purulent expectoration, considerable hurry of respiration, shooting pains about the shoulders, disturbed and sleepless nights. The stethoscopic signs at this period consist of a minute and clear mucous rhonchus, more properly, perhaps, designated by the term muco, or sub-crepitant, and existing only in the superior portions of the lung. In other cases there is heard at this part of the chest a modification of the normal respiratory sound, which, when once distinguished, can never afterwards be mistaken, but the description of which in words, as of most other sensations, is a task of difficulty. The respiratory murmur is here somewhat modified, scarcely if at all diminished in intensity, yet giving the sensation of being moister, as though the bronchial tubes were lubricated with more fluid than in their healthy state; not, however, as it would seem, in sufficient quantity to produce the subcrebitant or mucous rhonchi.—*Medical Gazette.*

[*To be continued.*]

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PART I.

ORIGINAL COMMUNICATIONS.

Art. IX.—*Reflections on the Physiology of the Muscles and Nerves of the Orbit.* By P. Evers, M. D.

There are few topics in physiology more unsettled than that which has elicited the following hasty observations. Indeed it is singular, that men, distinguished alike for talent and scientific attainments, should entertain opposite opinions on matters admitting of clear, demonstrative evidence.

The necessarily rapid, accurate, and varied movements of the eye, are accomplished through the instrumentality of six essential, and two tributary muscles. The four recti and two oblique constitute the former group, whilst the levator and orbicularis palpebrarum compose the latter; these, however, more strictly appertain to the lids. Although seven nerves,—namely, the second, third, fourth, ophthalmic branch of the fifth, sixth, part of the portio dura, and of the sympathetic,—enter the orbit; three only,—the third, fourth, and sixth,—shall receive special notice in this article; as being more immediately

connected with the points at issue. In pursuance then of our prescribed end, we proceed to review in succession;—first, the separate and combined action of the several muscles; and in the second place,—the functions and properties of the third, fourth, and sixth nerves respectively, and the reasons of the two latter being distributed, each to a single muscle.

There is a remarkable tendency to an association of action between certain groups of muscles on the same as well as on opposite sides of the body; for instance most persons experience a difficulty in executing the opposite movements of individual fingers, or of the upper and lower extremities. Persons using great muscular exertion, or suffering from extreme difficulty of respiration, constantly move the muscles of the face, though they can afford little or no assistance. But the most happy illustrations of this consensual muscular movement are presented by some of the muscles of the two eyes. Even though the stimulus of volition be applied only to one eye, both pupils contract; I say, the stimulus of volition, because we do possess the voluntary power of contracting the pupil, by rotating the eyes inwards, as in viewing a near object, although the quantity of light remains the same. Here, then, is a remarkable consent of action between the same muscles on both sides, aswell as between the rotating muscles inwards and the iris of the same side.

Another fact worth recollecting in the elucidation of our subject is, that all parts of the muscular system are ever in a state of partial contraction, even during their apparent repose. This admits of easy proof in the case of paralysis of the muscles of one side of the face; here the muscles of the opposite side distort the countenance by drawing the features to their own side. Every operating surgeon must have observed the contraction of muscles apparently relaxed, on dividing their antagonists; and on this it is that the success of that modern though now hacknied operation for squinting, in part depends.

Muscles.—During health the *orbicularis* and *levator palpebrarum* exert but little influence over the motions of the eye;

in paralysis of the portio dura, however, the eye is protruded between the widely parted lids, by the pressure of the levator palpebræ from within; and in paralysis of the third nerve, the pressure of the closed lids from without, by the action of the orbicularis palpebrarum, causes the eye to recede within the orbit; the principal office of these muscles being to part and close the lids.

The four *recti* muscles arise nearly from a common point in the bottom of the orbit, and proceed forward in a divergent manner to their respective insertions around the anterior part of the sclerotic tunic. When any one of them contracts it directs the pupil towards its own side, and the simultaneous action of any two is equal to the direction of the pupil in the diagonal between them, whilst the combined actions of the four cause the whole globe to retreat (?) within the orbit.

We have now arrived at that part of our subject, cencerning which so much has been said and written, and with the most extraordinary and unaccountable difference of opinion; extraordinary surely it is, when we find the illustrious names of Soemmerring, Cloquet, and Harrison, directly opposed to the no less celebrated names of Müller, Monro, and Sir Charles Bell, on a question so simple, and so easy of decision, that it falls within the reach of the veriest tyro in anatomy: I allude to the action of the oblique muscles of the eye. The three former authorities assert, that the superior oblique rolls the eye in such a manner as to direct the pupil downwards and inwards; and that the inferior oblique moves it in the opposite directions. Whilst the three latter authorities maintain, that the superior oblique turns the pupil downwards and outwards; and that the inferior oblique rotates it upwards and inwards. I hope to be able to prove a little farther on, that Soemmerring, Cloquet, and Harrison, have fallen into an error upon the subject. The question, how such justly celebrated men could have done so, remains an open one.

Careful anatomical dissection, correct views of the laws

which regulate the economy of the nervous system, and well-devised experimental physiology, need only be combined, to elucidate the true action of the oblique muscles of the eye. No difficulty can be encountered in the prosecution of this inquiry by any one who will preserve in his mind the recollection of three facts:—first, that both muscles act towards a point internal and anterior to the globe of the eye;—secondly, that they pursue a very oblique course, from their point of action to their insertion, the one above and the other below the ball of the eye; and lastly,—that the eye has two axes,—an antero-posterior, and a transverse.

The *superior oblique* having emerged from the bottom of the orbit, takes its second departure from its point of action at the internal canthus, to be inserted into the back of the sclerotic, external to the antero-posterior, and behind the transverse axis of the eye. It is obvious that, from its posterior insertion, it must roll the eye in such a manner as to direct the pupil downwards; and from the same insertion being external to the antero-posterior axis, it will cause the pupil to look outwards. Then the uncombined action of this muscle undoubtedly has the effect of turning the pupil *downwards* and *outwards*.

The *inferior oblique* takes its origin from the inferior and internal margin of the orbit, and runs upwards, backwards, and outwards, to be inserted into the inferior surface of the sclerotic, behind the transverse, and external to the antero-posterior axis of the globe. When it rolls the eye, in consequence of its posterior attachment, it will direct the pupil upwards, and by virtue of its external attachment, it must cause the pupil to look inwards. Its individual action then, will direct the pupil *upwards* and *inwards*. And in consequence of both obliques acting from points anterior and internal to the globe of the eye, their combined influence will have the effect of drawing the whole organ forwards and inwards. These several movements are easily displayed by performing gentle tractions on the individual muscles, when carefully dissected in the human

orbit. Had these muscles taken an horizontal course directly backwards, their action would have been quite different, and, doubtless, the whole misconception respecting them has arisen, from not duly considering the actions necessarily consequent on their peculiar obliquity.

The facts afforded by dissection receive additional strength from the result of experiments performed on the lower animals. We have repeated the experiment of Sir C. Bell, of dividing these muscles in rabbits, and uniformly with similar results, i. e. section of the superior oblique was followed by rotation of the eye upwards and inwards; and when the inferior oblique was cut, the eye rolled in the opposite directions. It appeared during these experiments, as well as from tractions made on the muscles in the human subject, that the superior oblique was capable of rolling the eye to a much greater extent than the inferior. From these two available sources, dissection and experiment, which are within the reach of all, we derive a mass of demonstrative evidence, sufficiently forcible to induce conviction.

Mr. Hunter has devoted three or four pages of his "Animal Œconomy" to the consideration of the uses of these muscles, and like most of the writings of that once magnanimous man, the subject is clouded with a good deal of obscurity; however, the essence of the article is expressed in the following quotations: "From this mechanism we find these three modes of actions produced; first, the eye moving from one fixed point to another, then the eye moving along with an object in motion; and last, the eye keeping its axis to an object, although the whole eye, and the head, of which it forms a part, are in motion." That his views respecting their individual actions are opposed to mine, may be inferred from another sentence, where he says, "When the head is moved towards the right-shoulder, the superior oblique muscle of the right-side acts and keeps the right-eye fixed on the object; and a similar effect is produced upon the left-eye by the action of its inferior oblique

muscle; when the head moves in a contrary direction, the other oblique muscles produce the same effect."

Those peculiar movements of the eye, which so intelligibly express the language of the mind, have been severally referred to the influence of the superior oblique muscle, hence it has been variously designated, the muscle of rage, the muscle of pride, the muscle of scorn, and the muscle of love: and it shall appear by-and-by, that Sir Charles Bell attributes other offices to it. It has been denied that this muscle plays any part in ogling, seeing so many animals provided with it who do not make love in that way; but as well might it be said, that man's brain does not constitute him the monarch of the earth, because the mental principle is more generally dispensed to the lower grades of animated nature than it is to him. In fine, who that has ever received the caressing smiles of soul-bewitching woman, has not observed love scintillating from her eye.

Nerves.—How often have I heard the question asked, to whose discoveries are we indebted for our knowledge respecting the double function of the spinal nerves; and the reply uniformly expected was, to Bell and Magendie. But if these inquirers would take the trouble of interrogating for themselves, they would cease to associate the name of Magendie with that of Bell, at least in so prominent a manner. They would learn, that so far back as the year 1811, Sir C. Bell published a treatise entitled, "An idea of a new Anatomy of the Brain, submitted for the Observation of the Author's Friends." In this he propounds his idea of the posterior ganglionic roots of the spinal nerves being the source of sensation; the anterior, that of motion; and of the nerve compounded of the two, possessing sensitive and motor properties.

After the long lapse of eleven or twelve years, Magendie having heard of this, sanctioned its probability; and in the ardour of his notoriously sanguine enthusiasm, he was soon led to test by experiment the truth or sophism of Sir Charles

Bell's fruitful conception. His experiments were cruel and bloody to a degree, and necessarily inconclusive having been performed upon large unmanageable quadrupeds, whose whole economy sustained such a shock by the free exposure of the spinal cord, as to defeat every attempt at approximative induction. Moreover, the animals were expiring from hæmorrhage, often before the experiment was concluded. Arguing from inductions drawn under these circumstances, he asserted, that the posterior roots were partly, but not wholly, sensitive; and the anterior partly, but not wholly, motor. In fact, the full establishment of Bell's rich discovery awaited the ingenious and decisive experiments of the German physiologists, especially Müller, whose profound work on physiology has been so elegantly and ably translated into English by Doctor Baly of London. Nor did the brilliant discoveries of Sir Charles Bell end here, he has continued to extend his useful researches to individual portions of the nervous system; and every practical physician must be ready to acknowledge the lights he has shed on the pathology of this obscure department of medicine.

Before entering on the consideration of individual nerves, it may be useful to mention, that like the muscles, the nerves are, to a certain extent, amenable to a law which establishes a consent of action as well between nerves of the same side, as between those of the right and left sides of the body; i. e. one voluntary or involuntary impulse may give rise to several movements at the same time. The more imperfectly the nervous system is developed, the more unpractised or uneducated it is, so much the more prone is it to the occurrence of these associate movements. This observation is susceptible of numerous illustrations;—for instance, many of my now grave readers may recollect their boyish days, when first they were treated to a watch, how likely they were to let it fall while winding it, admiring its movements, &c. Another illustration is afforded by contrasting the undefined, vacant stare of the uneducated rustic, with the sharp, penetrating eye, and expressive features of him

who has freely shared the benefits of society and education. Many other examples may be observed in the several actions and movements of awkward persons, &c.

However, this tendency to consensual action which has been so wisely impressed upon certain nerves, has, doubtless, for purposes equally wise, been denied to others. Performers on the piano-forte, indeed, and other musical instruments, afford us examples of the faculty of nervous insulation to a very perfect degree; though I feel assured, from experience, that in this instance, the faculty is acquired by habit and education; while in the cases about to be adduced, it is equally certain that it is not the effect of habit, but is innate and original. In the muscles and nerves of the orbit, the physiologist is at once furnished with satisfactory illustrations of associate and antagonistic actions.

The *third*, or *motor oculi nerve*, having formed its cerebral connexions with the inner edge of the crus cerebri and middle perforated plate, is embraced by the superior cerebellar, and posterior cerebral arteries. It then directs its course forwards and outwards, and having passed through a separate fibrous canal in the outer wall of the cavernous sinus, it divides into two branches of unequal size, which, entering the orbit through the base of the foramen lacerum orbitale, part the two origins of the external rectus, accompanied by the nasal branch of the ophthalmic and the sixth nerves. The superior small branch goes to the levator palpebræ, and the superior rectus; and the inferior, or larger division of the nerve, subdivides into three secondary branches, to be distributed to the inferior and internal recti, and the inferior oblique. It is of physiological interest to recollect, that from the long slender branch going to the last-named muscle, the ciliary, lenticular or ophthalmic ganglion derives its short root; whilst the long root of the ganglion is supplied by the nasal nerve, with a few exquisitely delicate filaments from the cavernous plexus of the sympathetic.

Every word of these simple anatomical details should be

borne in mind, for without a recollection of them, the physiology of the motions of the eye and iris would be unintelligible, and almost bereft of interest. Here then is a large nerve issuing from an undisputed motory source, not only ministering to five of the seven muscles of the eye, but through the short root of the lenticular ganglion, presiding over the movements of the iris also. From the moment of birth, a strict and beautiful consent of action is manifested between the motor oculi of each side; and the reason of it is explained, seeing that the muscles supplied by them move both eyes in the same direction at the same time, as upwards, downwards, and inwards; but it never becomes necessary to turn one eye upwards and the other downwards at the same moment; it would be quite impossible.

We can now understand why the pupil contracts when the eyes are rotated inwards as in viewing a near object, since the inversion of both eyes arises from the action of the muscles supplied by the third pair; and when one eye is everted, the other being closed, the pupil of the former dilates, the intensity of light remaining the same; because this action is determined by another nerve—the sixth. If, however, both eyes move together in a lateral direction, the pupils undergo no change, because the contraction arising from the inversion of one eye, is balanced by the dilatation produced by the eversion of the other, just in the same manner as if the eyes were exposed, the one to an intense, and the other to a subdued light; the pupil is alike in both, and of a medium size between those which the two different impressions of light would produce if separately applied. These considerations enable us to understand why the eye which is insensible to light from paralytic amaurosis, will have its pupil contracted by the admission of light to the sound retina.

During sleep the pupils are contracted, and are directed upwards and inwards; this is the case also in extreme instances of exhaustion, debility, and ebriety; and is supposed by Sir C.

Bell, "to depend upon the rolling influence of the oblique muscles, the recti being then in a state of debility and relaxation." But to be convinced that this explanation is quite futile and unsatisfactory, it is only necessary to recollect, that the inferior obliques and those of the recti which direct the pupils upwards and inwards are under the influence of the same nerve, and that the action of the superior oblique is, to turn the pupil downwards and outwards. In order to comprehend the true solution of this hitherto obscure phenomenon, we need only repeat what we trust has been proved in a former part of this article—namely, that the voluntary muscles, during the state of their apparent repose, are really in a state of partial contraction. This being the case, and the truism conceded, that "union is strength," it becomes obvious, that the simultaneous influence of the branches of the third nerve, distributed to four of the six acting muscles, should cause the pupil to be directed upwards and inwards; and its contraction is explained by the short motor root of the ophthalmic ganglion; for the experiments Nysten and Reinhold authorize the belief, that galvanism applied to the trunk of the third nerve induces contractions of the iris.

This is a fit place to make allusion to that enigmatical question, the influence of certain therapeutic agents upon the motions of the iris. It is well known, that poisonous doses of opium and aconite almost invariably produce contraction of the pupil; whilst several plants of the natural orders solaneæ and umbelliferæ, as belladonna, hyosciamus, and cicuta, uniformly induce a dilated condition of it. Some of the best physiologists of the day candidly declare their inability to explain these phenomena; Mr. Lawrence, for instance, says—"I confess that I cannot explain them." Others who labour under the delusion of being able to smooth every asperity in physiology, are satisfied by stating, that belladonna causes enlargement of the pupil by paralyzing the muscular sphincter around its orifice, thereby permitting the elasticity of the radiating fibres to come into full

play, and to dilate it. That may appear plausible enough to one that is satisfied with every thing he hears or reads stamped with respectable authority; but the inquiring mind, gifted with the power of reflection, will seek a more rational, conclusive, and scientific solution of the matter.

We have seen that the pupils were contracted during sleep, during intoxication, and in states of nervous exhaustion; they are also contracted in hysterical attacks, in the first stage of hydrocephalus, in some injuries of the head, and after death. Now, it must be admitted, that opium and aconite induce states of the system very analogous to these several conditions, and there are strong grounds for presuming, that the nerves of the orbit are influenced in a manner precisely similar in both cases. If so, we have the explanation of a point in physiology by a mode which has been unessayed before. But how are we to explain the dilating influence of belladonna, henbane, and hemlock? I have never seen a case of absolute poisoning by any of these; but in consequence of the impaired state of my own general health, combined with an erethism of my bronchial membrane, which has hitherto resisted every effort, and baffled every expedient of one of the first physicians in Europe, I have repeatedly taken very large doses of opium, belladonna, henbane, &c., in all their forms. Opium at first afforded me balmy nights, but they were of short duration, for it soon acted as a stimulus, in many respects like that of green tea. For some time it continued to produce universal pruritus of the surface of my body, of rather an agreeable character; this, however, ceased with its other pleasurable effects; but *ischuria vesicalis* continued to be a never-failing consequence of a full dose of it. The effects of belladonna, &c., though not decided enough to aid me in my present investigation, were very different from those of opium; and a reference to toxicological works forcibly supports my preconceived ideas. For instance, the leading symptoms of poisoning by opium, are, "giddiness, stupor without previous stimulus, the person is motionless, and insen-

sible to external impressions, breathes very slowly, lies quite still, with the eyes shut and the pupils *contracted;* and the whole appearance of the countenance is that of a deep and perfect repose."

How different are the symptoms of a person labouring under the poisonous influence of belladonna or henbane. Here "the pupils are widely *dilated,* the eyeballs protruded, the breathing difficult, the arms convulsed, delirium extravagant, and furious, the person dancing about the room like a maniac." (See Christison's excellent book on *Poisons;* and Pereira's transcendent work on *Materia Medica,* Part the Second, which has just appeared. Under the head of "Aconite," will be found the interesting details of the poisonous effects of this substance on three persons of the same family, to one of whom it proved fatal in four hours.) Here then is a group of phenomena characteristically opposed to those arising from the influence of opium, and closely allied to what is observed in cases of excitement generally: thus a man in a rage has his eyeballs freely uncovered, protruded, and presenting a dilated pupil; this is also the case in the second and third stage of hydrocephalus, in apoplexy, and certain injuries of the head, and such is the ordinary condition in the more fierce of the carnivora and timid of the rodentia. In the states of rest and repose the eyes converge, and the pupils are contracted. Opium produces similar effects, doubtless by operating on that part of the brain which is connected with the root of the third pair of nerves. Whilst belladonna causes dilatation of the pupils and parallelism of the optic axes, by exerting its influence on those parts of the brain chiefly, which afford attachment to the fourth and sixth nerves: for without at all participating in the arbitrary dogmas of phrenology, it must be admitted, that the cerebro-spinal system confers specific endowments upon its respective nerves, and that these messengers transmit their errands in the centripetal as well as in the centrifugal direction.

The *fourth nerve,* which is also called trochlearis pathe-

ticus, and by Sir Charles Bell, the respiratory nerve of the orbit, takes its cerebral attachment, by two or three roots, from the superior and lateral part of the valve of Vieussens, immediately behind the testes. This delicate nerve then pursues a long and circuitous route, downwards, forwards, and outwards, and passing through a fibrous canal in the external wall of the cavernous sinus, it enters the orbit through the sphenoidal fissure, and having received a twig from the frontal branch of the ophthalmic, and a filament from the sympathetic, it is distributed to the upper surface of the superior oblique muscle. Sir Charles Bell looks upon this nerve as presiding over the instinctive and insensible rolling motions of the eye. He allies it to the respiratory(?) system of nerves, and asserts, that during sneezing and other involuntary respiratory efforts, it directs the front of the eye upwards, under cover of the upper lid. But to be convinced that one of the greatest of living authorities may occasionally fall into error, it is only necessary to recollect, that he agrees with us in supposing the superior oblique muscle to have the effect of directing the cornea downwards and outwards.

The *sixth*, or *abducens nerve*, having formed its encephalic attachment to the outer side of the corpus pyramidale, immediately below the pons, proceeds forwards, upwards, and outwards, to the cavernous sinus, through which it passes, external to the internal carotid artery, and receiving from behind forwards, two or three of the nervi molles from the superior cervical ganglion of the sympathetic, it is introduced to the orbit, inferior to the other nerves, and just above the cerebral ophthalmic vein, and having reached the ocular surface of the external rectus, it is distributed to it in a divergent manner.

It has been shewn in a former part of this article, that the two eyes, whether directed upwards, downwards, or inwards, always moved together, and that those consensual movements depended upon an innate association of action between the branches of the third nerve of the same, and of opposite sides. But this consentaneous influence has, for wise and obvious pur-

poses, been denied to the fourth and sixth nerves; and the same provident design has been displayed in consigning a single muscle to the sole care of each of these nerves; for instance, when one eye is directed downwards and outwards by the action of the superior oblique, the other is not turned in the same direction, as it would be if the fourth nerve of both sides had been associated, but it is turned downwards and inwards. This is the normal state of both eyes in viewing a lateral object below the level of the eyes. If the superior oblique, instead of the fourth, had received a branch from the third nerve, the action of both obliques of the same side, would be the same. This is the reason of the superior oblique receiving a distinct nerve. It would not answer to have the inferior oblique supplied by the fourth, and the superior oblique supplied by the third pair; as they should have been, in order to accord with the actions assigned to these muscles by Harrison, Cloquet, Sœmmerring, &c.

A similar line of reasoning applies, and with equal force, to the sixth nerve. When the axes of both eyes converge, as in beholding a proximal object, the external rectus of each side acts simultaneously to the extent of restoring parallelism, but there their consensual action ends. Both eyes can never be made to diverge synchronously, it would be quite impossible. Had the external rectus been supplied by the third instead of the sixth nerve, their independent action was at an end; and one eye could not have been directed inwards and the other outwards at the same time. In this last movement, it is true, the two internal recti oppose each other, but it is only reasonable to suppose, that a weak muscle, supplied by a small branch of a nerve, should be overcome by a stronger opponent, under the command of an entire nerve: and one need only practise the experiment in themselves of forcibly rotating one eye outwards, to be convinced that the effort is an extreme one, and that the uneasy sensation attendant on it is declaratory of an active opposing influence.

Every one is aware of the difficulties which have encompassed, and, indeed, hitherto have defeated the successful consideration of the subject of the preceding reflections; and although we are not vain enough to imagine, that we have wholly succeeded in removing all these difficulties, yet we hope the attempt which we have made, shall have had the effect of inducing others to undertake its more complete elucidation.

More than once through this article, it has been found necessary to express sentiments different from those entertained by gentlemen who justly claim our deepest respect; and we wish them to be assured that, in doing so, we have been influenced by no other motive than that dictated by the unbiassed desire of investigating truth; and that so far from meaning to detract from their singular merits, we offer our tribute of admiration to the lustre which illumines every page of their literary productions, more especially those of Professor Harrison of Dublin, from whose oral communications we have derived many of our rudimental impressions.

ART. X.—*On the Diagnosis of Abdominal Inflammations.* By WILLIAM GRIFFIN, M. D., M.R.C.S.E., Physician to the County of Limerick Infirmary, &c.

THE following cases are intended merely as new and striking illustrations of a fact, to which I have in a paper formerly published in this Journal endeavoured to direct the attention of the profession; viz. that inflammatory, or other affections of the spinal cord, or of its nerves, at their origin, more frequently simulate abdominal and thoracic inflammations, and are more frequently mistaken and maltreated, than is at all imagined. As I know of scarcely any cases in which the diagnosis is so difficult, where the practitioner is not fully informed on the subject, or a mistake so likely to be attended with very deplorable consequences, I shall, I hope, be excused for returning once more to their consideration.

There are three effects very common to inflammation, or

disorder in the spinal cord, or at the trunks of its nerves. 1st, superficial tenderness, more or less exquisite, and either limited to the integument immediately over or about the affected portion of the cord, or extending thence to the front of the abdomen or thorax, in the direction of the spinal nerves; or occupying the whole cutaneous surface of those parts of the body, which are below the portion of the cord affected. 2ndly, pain either close to the affected portion of the cord, or at the extremities of the nerves, which have their origin there; or in the ganglionic nerves supplying the viscera, which have connexion with that portion of the cord. 3rdly, loss of power evinced in partial or complete palsy of the parts or organs, to which the affected nerves are distributed. These effects often occur simultaneously, but any one of them may also occur independently of the existence of the others, offering very strong evidence, that the sensibility of the surface or skin, and that which exists in internal organs, is dependent upon nerves, which, though sentient, are as distinct from one another, as they are from those on which the power of motion depends. Keeping these ordinary effects of disorder of the spinal cord in view, it must appear obvious, when we detect soreness or tenderness on pressure, in the region of the liver or spleen, or of the lower abdominal viscera, how important and essential it is for us to ascertain whether the soreness be superficial or deep seated, which we can almost always do by careful examination. Again, when pain is complained of in the region of the liver, or middle or lower parts of the abdomen, how necessary is it to ascertain, whether, as in the case of soreness, it be superficial; and, if deep seated, whether it be merely an affection of the nerves of the part, and probably connected with some affection of the adjoining portion of the spinal cord, or whether the internal organ itself be in a state of acute or chronic inflammation. Finally, if there be oppression in breathing, whether it arises from deficient action in the respiratory nerves, and, as a consequence, imperfect action of the respiratory muscles, or imperfect performance of the process of oxy-

genation of the blood in the lungs; or from actual inflammation, or organic disease of the mucous membrane, or parenchyma of these organs.—Or if there be obstinate constipation of bowels, whether it depends on spasm, or enteric inflammation; or whether purely or deficient power, or partial palsy of the muscular fibres of the intestines. I know of no case which so often misleads the inexperienced or uninformed practitioner as obstinate constipation of bowels from paralysis of the nerves, when connected, as it frequently is, with abdominal pain and exquisite soreness on pressure. The following case appears to me to be highly illustrative of the fact.

The captain of a merchant vessel, a hale, hardy man, aged about 45 years, while at sea, was attacked with pain in the back and belly, and obstinate constipation. Having no medical advice, he took successive doses of purgatives, until he exhausted every medicine of that description in his medicine chest without avail. At the end of nine or ten days, the violent pain and constipation yet continuing, he reached the river Shannon, when an apothecary came on board, and gave him large doses of croton oil, which eventually purged him severely, *but without any relief to the pain.* The bowels became again constipated, and after a few days continuing still in extreme suffering, a physician was sent for, who bled him largely, and directed fresh purgatives, both by the stomach and by enemata. The bleeding gave considerable relief, but the bowels continuing confined, and the pain returning on the following evening in a violent degree, I was sent for to consult with the physician in attendance. I found the patient complaining of great pain in the abdomen and round the loins; with difficulty of passing water, and obstinate constipation. The entire surface of the abdomen was very tender to the touch, and in the pubic region excessively so; there was also over nearly the whole trunk of the body an acute soreness of the skin, especially about the hips and lower extremities, which made it painful to turn himself in the bed, or to permit any one to assist him in doing so; there was great tenderness on pressure along

the whole spinal column, but he complained of the pain only in the lumbar portion, and in the corresponding parts of the abdomen in front; his skin was hot; his tongue foul; his pulse small and rather feeble, at 128; he had been bled to the amount of more than a quart the night before, and was continuing the purgatives and enemata.

If, in this case, the general soreness of surface, of which the abdominal tenderness formed but a part, and the general soreness of the spinal column were left out of consideration, which they necessarily would have been by any practitioner who did not look for them, I know of no symptom which could have led one to doubt the disease was any other than peritoneal inflammation running into enteritis. The whole appearances were, indeed, so characteristic of one or both of these affections, that I had myself some hesitation on the subject, although my belief was, that the disease from the first was some inflammatory affection of the spinal cord or its membranes, occasioning pain in the back and viscera, and accompanied by that superficial soreness which attends almost all severe spinal affections, as well as by the constipation which is a common result of deficient power in the muscular fibre, whose motor nerves are in an inflamed or disordered state. The physician in attendance agreed to suspend the exhibition of some croton oil which he was about to give, on my explaining my views of the case, and to substitute repeated doses of opium combined with calomel. To satisfy his apprehensions, however, two dozen leeches were applied to the pubic region instead of to the lumbar vertebræ, or sacrum, to which I felt they ought to be applied, and a simple purgative enema was administered. The leeches bled freely through a great part of the night, and he took twelve pills within the same number of hours containing two grains of calomel and one grain and a-half of opium in each, without relief to the pain. He had no headach from this quantity of opium but his stomach was somewhat sick, the enema had come away without any admixture of fæces, the tenderness of abdomen and other parts

of the surface, the temperature of skin, and the state of the tongue and pulse continued as before. Pills of crude opium, every hour, (one grain in each,) were now substituted for those with calomel and opium, the enema was repeated, and with much reluctance I consented to the anxious desire of my medical colleague to apply a blister to the abdomen, from which I augured little good. At our evening visit, the blister had risen well, but the symptoms remained unaltered; on the following morning we found he had passed a restless, painful night; the pain of the abdomen had abated, but the pain of the back was as distressing as before, and elicited continual complaints from him. He had now taken, since I saw him, eighteen grains of opium within the first twelve hours, and nearly twenty-four grains within the last twenty-four hours, without any considerable relief to the pain, without any sleep, or even drowsiness, and without any headach. I had now some difficulty in inducing my colleague to continue the opium treatment, as it was apparently doing no good, and purgatives seemed so much more strongly indicated. On stating to him, however, my perfect confidence in the influence of the opium in controlling inflammatory action, whether in the spinal cord, or in the intestines, and that the latter would most readily act when once the inflammation was subdued, he consented to the continuance of the treatment a little longer. As there was a possibility that the opium administered might not have been of good quality, we now directed a draught containing a grain of acetate of morphia, with a drachm of tincture of henbane, to be given, and a similar dose to be administered in two or three hours, if there was neither abatement of pain or sleep. To our great gratification, several hours' quiet sleep followed from the draught, after which he became restless and uneasy; but on getting the second draught, slept again quietly for the entire night. In the morning we found him for the first time free from pain, his pulse slower, and feverishness less, and ordered him an ounce of castor oil, to be followed in a few hours by a purgative enema. My confident anticipation, that when

once the pain and inflammatory symptoms were subdued, mild medicine would be found to operate, where before the strongest doses often repeated had failed, was now fulfilled; the castor oil and enema purged him freely: he got a repetition of his anodyne draught at night, and he slept soundly a second night. On the succeeding morning his pulse was fallen to 100, his tongue was cleaner, and his urine less turbid. He, also, for the first time evinced some disposition for food. His abdomen was still excessively tender, although he had no pain. We directed a repetition of the castor oil, and after its operation half the anodyne draught to be given at bed-time.

It would probably be argued by many medical men, that in assuming this to be a case of inflammatory affection of the spinal cord or its membranes, I was doing so quite gratuitously, that it was from the commencement a case of colic or ileus terminating in peritoneal or enteric inflammation, and that the treatment employed, which eventually proved successful, was well known to be such as would generally give relief in such cases after large bloodletting. I should, perhaps, not insist so positively on the view I took of the disease, if the sequel had not amply borne me out.

On our next visit, November 15, we found the pulse had fallen to 85, the tongue was yet cleaner, his bowels had been well moved and he passed his water freely. The spine, however, was still tender, and the soreness of the abdomen as before; he complained also of soreness and weakness of the left arm, which he attributed to lying on it. A little broth and other nourishment was ordered for him. No medicine. November 16th, found him improved in every respect except as to the left arm, which was now quite paralytic, and extremely sore to the touch. It lay helpless by his side, he could neither lift nor move it, but could flex or extend the fingers; his appetite was good; his skin cool, and his pulse natural. A strong stimulating liniment was directed to be rubbed on the spine, night and morning, and a little meat and wine were allowed. He went on, doing tole-

rably well for two or three days, and gaining strength generally; the arm, however, still continuing helpless. On the 20th he got a change for the worse, complained of weakness, especially in the right arm, which had not been before affected; his pulse was quicker, his appetite impaired, and the urine became again high coloured, with a copious pink deposit on cooling; we discovered that he had been for the last day or two fretting much about his ship and private affairs, and that he had on the previous night eaten and drank to an extravagant amount. On the following day, Nov. 20, his right arm was also paralyzed, the power of moving the fingers alone remaining; his pulse was 120; his skin warm and disposed to perspire. There was no feverish heat, however,—no pain—no nausea—but his appetite was gone, and his bowels confined. It is unnecessary for the object of this paper to enter minutely into the detail of a very protracted case; it will be sufficient to mention, that each of the lower extremities became successively paralyzed; after that his neck became affected, he became hoarse, and spoke in hoarse whispers; the day after, he complained of giddiness or reeling in the head, and some headach. The treatment consisted in successive blisters along the whole course of the spine; moderate purging, and the hydriodate of potass three times in the day. When all feverishness subsided, when the pnlse became natural, and his appetite returned, bitters were directed, with a twelfth of a grain of strychnine every sixth hour. Under this treatment, the power of the lower limbs was gradually restored, and the arms recovered sufficient power to admit of his elevating them a little. The fingers of both hands, however, are flexed into the palm, and from the weakness of the extensor muscles he is unable to extend them. He is since walking about with his arms in slings, and there seems to be a progressive though slow amendment, which leads me to anticipate their eventual recovery.

I shall now state another case equally convincing. A gentleman, aged about forty years, of spare habit, but hardy con-

stitution, was affected with a severe feverish attack, consequent to getting wet and chilled on a long journey. He had intense headach, sickness of stomach, with distressing retching, and disposition to constipation of bowels for several days. A dozen leeches were applied twice to his head, and bled profusely; his hair was cut; cold lotions were constantly applied to the vertex and forehead, and he was repeatedly and freely purged. He never had much heat of skin; the pulse was quick, but neither full nor hard; it was, in fact, rather a weak pulse. In a fortnight from the commencement of his illness, during the first week of which he had no medical attendance, he was evidently better, his pulse slower, his tongue a little cleaner, the sickness of stomach less, and his skin quite cool. He complained, however, still excessively of his head; said he felt a queer, indescribable feeling as if it was too large for his body; complained of noises; and though the nausea had abated, had not the least desire for food. He required very strong purgatives to move his bowels; and I observed that whenever he got one, he was always worse while its action continued, which was usually for eighteen or twenty hours; the unpleasant feeling of the head, the noise and the sickness of stomach were more distressing, although he commonly felt better the day after. He appeared to me to be of a very nervous temperament, and informed me that in his best health, when he took a purgative, he was always made ill for the day. As he had at present a constant unpleasant feeling like indigestion at the stomach, and generally a sense of fullness about the bowels, when they had not been recently moved, he was himself anxious for the purgatives, much as they disagreed with him. After having taken an active one at the period of his illness, which operated severely, he passed a tolerable night; but about the middle of the following day he was seized suddenly with the most violent pain in the abdomen and back which I ever witnessed. The pain was constant and worst about the navel, but it was most agonizing in the lumbar region; his skin was cool; his pulse rapid and

weak; his countenance clammy with moisture, and expressive of the utmost suffering; the abdomen was sore to the touch, especially where the pain was greatest, and the stomach was sick, although there was no retching. It would be difficult, in fact, to distinguish the case from one of those severe attacks of enteritis, in the onset of which, it is said, there is such depression of vital power that the pulse is small and feeble, but requires strength and volume after bloodletting. I should he sorry to recommend a practitioner to bleed under such circumstances, in any case, although, until lately, in most treatises on inflammation of bowels we are told not to be intimidated by the state of the pulse. Opium is the great and only defensible remedy, whenever the least doubt can be entertained, either as to the nature of the attack, or the strength of the patient. If the case be pure inflammation, it is as capable of subduing it as the abstraction of blood, while, if it be not inflammation, or though a case of inflammation, if the powers of life be much sunk by previous illness, the patient is irrecoverably lost by a large bleeding. I have seen a sad instance of this, even where there was no mistake as to the nature of the case. In the instance I am narrating, thirty dops of laudanum and a grain of opium were given, and after, a large quantity of spirits of camphor and laudanum was rubbed in to the back and belly; large poultices of bran, moistened with boiling water, were applied, enclosed in flannel, to both situations. A grain of opium was subsequently given every half hour, until he expressed a sense of relief from the pain, which did not occur until he had taken, in all, about six grains of opium. After the pain had entirely subsided, drowsiness and a sense of sinking came on, with sickness of stomach and occasional retching; his pulse was feeble and thread-like, his skin cold and clammy, and large drops of cold perspiration bedewed his forehead. He had a great desire to sleep, but as soon as he dropped off the sickness of stomach came on, and he was compelled to start up from the pillow and call for the bason. I now directed him to get

burned brandy in teaspoonsfull at short intervals until the sinking and retching were relieved, which took place in two or three hours, after which he got quiet sleep until morning. He then appeared much better in every respect, but complained much of soreness near the navel where the severest pain had been. The stomach, too, was yet unsettled, the head uneasy in the manner it had been all through, and he had no appetite. He also complained of some difficulty in passing water, a common consequence of large doses of opium. For this, sweet spirits of nitre was ordered, and, as nourishment, some chicken broth and arrow root. He went on improving for two or three days, and then became affected with pain and soreness in the right side. The tenderness was most acute to the touch, immediately over the situation of the gall-bladder, and extended round along the margin of the ribs to the back; no other part of the abdomen was now tender but this, and there was no tenderness of the spine. My patient could hardly be persuaded by any argument that he had not got a liver complaint, and if the situation of the chief pain and soreness, the constant nausea, and sometimes retching, which he had from the commencement, and the foulness of tongue, which he had never lost, were alone considered, few medical men would have disagreed with him. I had considerable hesitation in coming to a conclusion myself on the subject; but as I was exceedingly unwilling to weaken or torment him unnecessarily, by leeching, blistering, or mercury, I investigated the case most minutely. On endeavouring to ascertain accurately the boundaries of the soreness, I found it extended below the margin of the ribs, down to the spine of the ileum, which was not likely to occur in chronic inflammation of liver, unless where there was great enlargement; I found also, that although he actually screamed, or started, when I touched his side ever so slightly, I could, by pushing the fingers of both my hands towards the liver, one from the right side, and the other from the left, so as to keep the tender muscles or integuments outside them, make as great pressure as I pleased upon

that organ, without giving the slightest pain. I satisfied myself, in fact, that the pain and soreness were altogether in the integuments, and instead of annoying my patient with painful or weakening remedies, I ordered tonics, and the application of a belladonna plaster to the painful part. In two or three days, he was much stronger and free from the pain. After the lapse of some few days more, however, a new complaint presented itself, pain and soreness in the region of the bladder, along the course of both spermatic cords, and in the testicles, with a feeling of want of sufficient power in expelling the urine, and some sensation of heat. A belladonna plaster was now placed over the pubes, extending to each groin, after the application of ten or a dozen leeches, which I was induced to apply in that situation, as there was no obvious tenderness of spine. The heat and tenderness were abated by the bleeding, but the other symptoms continued, and the weight of the testicles kept up such pain along the spermatic cords, that he was unable to walk across the room without a suspensory bandage. He had for some time been taking a grain and a-half of sulphate of quinine, with three or four grains of extract of hyosciamus three times a day, and his appetite and strength were very much restored. As the pain and soreness, already described, continued to a very troublesome degree, I again examined his spine, and found a small spot exceedingly tender near the upper part of the sacrum, pressure on which brought on the pain in front. Being perfectly satisfied that the mischief lay in this situation, I immediately directed the application of a narrow blister to the sacrum, and on the following morning found my patient relieved from all pain and uneasiness. The result appeared to him almost magical, as he could hardly comprehend, that the source of all his annoyance should exist in a distant part, where he complained of no pain! The only unpleasant feeling that remained, was a slight conciousness of inability to expel his water with the ordinary force, which gradually subsided.

Experienced practitioners will probably think, that I have

been unnecessarily minute in the details of these cases, but they cannot claim the attention of the Profession too strongly, when the diagnosis of abdominal inflammations is often so difficult, and that tenderness or soreness on pressure, to which Abercrombie, and other men of celebrity, attached the highest importance, as a diagnostic symptom, is known to exist in an exquisite degree, and almost invariably in affections of the spinal cord or its membranes; when it would, in fact, appear, that, considered by itself, it is one of the most fallacious, instead of being one of the most certain signs of inflammation.

In determining the diagnosis of abdominal inflammation, where both pain and tenderness on pressure exist, we should always endeavour to ascertain:

1st. Whether there be any pain or tenderness on pressure in the corresponding portion of the spinal column; because, if there be, although it may not absolutely decide, whether inflammation be present or not; it is quite sufficient to account for both the pain and tenderness, without assuming the existence of any inflammation.

2ndly. Whether if there be no spinal tenderness or pain, the soreness of the abdomen be superficial or deep seated, which may be ascertained with tolerable certainty in all cases by an examination directed to that end. And whether, if both superficial and deep-seated, as it usually is, in peritoneal inflammation, gentle, steady pressure with the flat of the hand can be easier borne, than with the points of the fingers. In pain and soreness from affection of the spinal nerves it commonly can be so borne, while in peritonitis every kind of pressure, and even the weight of the bed-clothes, is very distressing.

3rdly. Whether the boundaries of the pain or soreness extend beyond what the suspected inflammation could produce. Thus, if inflammation of the liver be suspected, and we find the soreness extending to the spine of the ilium, or groin, or to the opposite side of the abdomen to which the liver does not extend, it is obvious, the soreness cannot be attributable to mere disease of

that organ. Again, if the whole abdomen be tender to the touch in a case otherwise closely resembling peritonitis, and we find the tenderness is not confined to the abdomen, but extends over the hips and lower extremities, it is obvious, we can attach no importance to the abdominal soreness as a sign of inflammation.

Finally, it should be recollected that constipation may depend on mere loss of power in the intestinal nerves, as well as on spasm, obstruction, or inflammation, as the treatment in each case must necessarily be modified, or directed by the supposed cause of this symptom.

ART. XI.—*An Attempt to estimate some of the characteristic Marks, by which to judge of the Cause of Perforations of the Stomach.* By THOMAS WILLIAMSON, M. D., one of the Physicians to the Leith Hospital, &c. &c.

[Continued from No. LV., page 54.]

VARIETY II.—*Perforation, from simple chronic Ulceration commencing in the Mucous Membrane of the Stomach.*

THE term *simple chronic ulceration* we adopt for the sake of convenience, in order to comprehend all the varieties which are associated with chronic inflammatory action; the *simple ulceration*, "seldom engaging any of the tunics beneath the mucous membrane,"* and, moreover, connected with acute action, we, of course, mean to exclude; but all others, (with the exception of such as are in connexion with morbid accidental productions) will be included under the general term of *simple chronic ulceration;* the reason why we exclude such perforations as are associated with scirrhus, or other morbid devolopments, is, because they are in general so palpable in their nature, as to make it doubtful, whether any one could confound the character of the

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* See Dr. Houghton's definition of this ulcer in the 660th page of the Cyclopædia of Practical Medicine.

tissues surrounding them, with those surrounding perforations from very different causes. It is now pretty generally admitted, that the mucous membrane of the stomach may be the seat of chronic inflammation, which may even pass on to ulceration without evincing any characteristic symptoms, by which to judge of its existence during life; so comprehensive is the generic term of "dyspepsia," that it includes within its range almost every variety of gastric sensation; indeed, the symptoms of inflammation, in its sub-acute form, or even ulceration of the mucous coat of the stomach, so closely resemble those, which are in general supposed to indicate mere *functional* derangement, (as the term is at present understood,) that, in general, the same plan of treatment is pursued with regard to both; although what is intended to be a service to the *one*, may prove a source of aggravation to the *other*. "Ulceration of the stomach may be a disease of less rare occurrence than we are aware of; it may be *induced*, at least aggravated, by the injudicious use of harsh emetics, or drastic purgatives, or an abuse of the oxyds of mercury,"* whilst chronic gastritis sometimes does exist, without manifesting, during life, such symptoms as would lead one to suspect it; on the other hand, there are cases, where, from almost unequivocal symptoms, it has been thought to exist, yet upon dissection no trace of organic lesion has been found; such cases have been taken notice of by *Frank* and others. M. Andral seems to lay considerable stress upon the *colour* which the mucous membrane presents, as indicative of the peculiar form of inflammation of which it was the seat, more particularly in reference to *chronic gastritis*; but though this may in a great measure hold true, he does not consider its importance as paramount, but would be guided far more by that which (in our opinion) is the surer index of its existence, viz., structural de-

* Crampton's remarks on ulceration and rupture of the stomach, contained in the 1st vol. of the Transactions of the King and Queen's College of Physicians in Ireland, p. 8.

rangement, or some of the essential characteristic products of inflammatory action. "The shades of colour, which principally belong to *chronic gastritis*, are the grey-slate colour, the brown colour, and lastly, the more or less black colour."* Upon what these various tints essentially depend, has not been fully discovered, although several ingenious explanations of the phenomena have been frequently offered. It has been supposed, that the dark brown, or black colour, which the mucous membrane presents in cases of chronic gastritis, is owing to the generation of *gases* within the intestinal canal, more especially the sulphureted hydrogen gas; but this explanation, at least so far as regards the stomach, is more than problematical, seeing that most physiologists of the present day agree in deciding, that the mere existence of that gas has not been detected, or proved within that *viscus*, and we are the more disposed to doubt the accuracy of this explanation, from the result of experimental inquiry. Several portions of intestine were taken, and in order to do away every objection which could in any degree invalidate the result, these portions were inverted, and thoroughly cleaned of their contents; a stream of sulphureted hydrogen gas was now so directed as to inflate these various portions, and by means of ligatures confined in contact with the mucous membrane; notwithstanding it was found, that after the lapse of several hours, or even days, no trace of this gas having communicated the brown or black tint to any of the tissues, entering into the composition of the intestinal parietes, was observable: from which we think, we are warranted in inferring, that the agency of this gas has no share in effecting the change of colour now under consideration. We know that the result of the chemical action of free acids upon blood is to change that fluid from the bright and florid hue, which, when obtained from an artery, it presents, to a dark and blackish colour; and though the doctrine of the healthy or morbid condition of the fluids be but imperfectly understood,

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* Andral, Clinique Medicale, p. 823.

is it irrational to suppose, that some change (of the nature of which we are ignorant) may not take place, in respect of the quality or acidity of the gastric juice, by the almost immediate contact, and chemical action of which, upon the already distended and congested capillary blood-vessels, the change of colour in question might be effected? We are aware that several objections may be urged to this theory, and such, too, of considerable weight; the hypothesis, however, is not more extravagant than others which have been urged in explanation of phenomena, the cause of which are unknown. These colours, however, are not invariably present in, or characteristic of, a chronic gastritis, as the following case related by M. Andral will sufficiently shew. "Very recently," says he, "we opened in the Charitè the body of a young man, who, for upwards of eight months before his death, presented all the symptoms of chronic gastritis, such as vomiting, sense of weight in the epigastrium, after taking food, complete anorexia; the state of the tongue, moreover, was natural, a state as common in chronic gastritis as it is uncommon in acute gastritis. In this individual the mucous membrane of the stomach was found to be of a bright red colour over a great part of its extent."* We shall now very briefly turn attention to the symptomatology of chronic gastritis, in connexion with this *second variety* now under consideration.

Symptoms of Chronic Gastritis.—From what we have already premised, it will be at once acknowledged, that to lay down a peculiar train of symptoms as pathognomonic of the existence of chronic gastritis is altogether impossible; no doubt, certain cases of the above affection do occur, following at the same time a train of so well-marked symptoms, as at once to lead to the detection of the true nature of the disease; but in a very great proportion of cases of chronic gastritis, either no well-marked symptoms exist at all, or the symptoms are so slight and am-

* Op. Cit., p. 826.

biguous, as neither to prove the source of much uneasiness or disquietude to the patient, nor the means of drawing the attention of the medical man to the true nature of the lesion. In those cases, however, which present to our notice such symptoms as announce the stomach to be the seat of mischief, we cannot do better than quote the language of Dr. Abercrombie, who, after talking of the insidious nature of the disease, goes on to say: "The patient perhaps complains of extreme acidity, eructations, flatulence, and oppression of the stomach after eating; there is generally some degree of pain in the region of the stomach, but it varies very much, both in its degree and its duration; in many cases, it is complained of only after eating, continues in considerable severity, while the process of digestion is going on, and subsides when the process is completed; the appetite is often unimpaired, but the patient is afraid of taking food on account of the uneasiness which is produced by it, and he is entirely free from complaint when the stomach is empty, a frequent expression of such a patient is, 'I should be quite well, if I could do without eating;' in other cases there is more permanent uneasiness which is aggravated by taking food, and sometimes there is pain in the back at the part corresponding to the seat of the stomach; in other cases again, there is no actual pain, but the uneasiness is described as a feeling of heat, or a great degree of pyrosis." The same author conceives vomiting to be in nowise an universal accompaniment; this symptom may be present during most of the progress of the disease, or it may be entirely absent, till within a short time of one of its most fatal modes of termination, viz., by *perforation* of the coats of the stomach, and effusion of its contents into the abdominal cavity.

Practical Observations.—The second variety of *perforation*, viz., that occurring during life, as a consequence of ulceration, might be illustrated by means of cases; but as the majority of those cases have been already narrated in other journals and works, it does not appear to us that a repetition of them is necessary. In accordance with our original design, we shall

now mention those points in the history and symptomatology of this affection, which, on a careful review of the whole, we esteem most worthy of observation.

Every one, who has paid attention to the symptoms and history of the cases of this affection on record, must remark the striking similarity, in some particulars, as well as the remarkable difference of symptoms presented by *one* set of cases, manifesting certain pathological lesions, from *another*, in which *post mortem* appearances were almost similar; the causes of these irregularities we will not take upon ourselves to point out; so that until we obtain a more accurate knowledge of the animal economy, we must rest satisfied by referring these anomalies to a constitutional difference of the system in which they are developed. Among the most prominent peculiarities of such cases are, the presence in one set of cases of symptoms leading to the suspicion of organic disease; in another, of such symptoms as are merely referrible to *dyspepsia*, or functional disturbance of the stomach; whilst in a *third*, of no symptom whatever manifesting itself at any time prior to the immediate fatal attack, in all of which no particular symptom existed, and the health of the patients was seemingly as good a few minutes previous to the fatal attack of perforation, as it possibly could be.* The symptoms which may lead one to suspect the existence of organic lesion of the stomach during life, are, pain, more or less severe, and continued in the epigastric region, nausea, and vomiting of ingesta, hæmatemesis, more or less profuse, occurring at intervals, as during the progress of ulcera-

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* Illustrations of the first of these classes will be found in cases detailed in the sixth number of the British and Foreign Medical Review; and by Ebermaier, London Medical and Physical Journal, vol. lx. Cases of the second class will be found recorded in the Medico-Chirurgical Review, vol. v.; and also by Ebermaier as above; while examples of the third will be found in the writings of Abercrombie, the London Medico Gazette, December, 1839, and the Medico-Chirurgical Tranactions, vol. viii.

tion, blood-vessels are from time to time opened, with gradually increasing emaciation, loss of appetite and strength. *Vomiting*, it may, however, be remarked, does not seem to be either an invariable attendant during the process of ulceration, nor an accompaniment after perforation has taken place. The girl had never vomited previous to the fatal attack, and even after this had taken place, the vomiting was so insignificant, as scarcely to constitute a peculiar symptom, having left her almost immediately after developing itself, without again returning. In the other cases, this symptom had never shewn itself, either previous or subsequent to perforation having taken place; the disease running its course, and terminating in death, without the contents of the stomach being at any time ejected; there are, notwithstanding, exceptions to the *general* rule, as vomiting, in the majority of cases, if it has not preceded, will at least be found one of the most characteristic and constant symptoms of perforation of the stomach. With regard to the *situation* of the pain, it is generally always referred to the epigastrium, or navel; and the sensation is described by Mr. Travers, as shooting, or radiating from a central point; it generally supervenes suddenly, without having given premonitory symptoms; and, when once developed, rarely ceases till death; but on the contrary, notwithstanding the exhibition of remedial agents, gradually increases in severity. Instances are, however, recorded where the pain, though at first acute, has suffered a remission. Dr. Elliotson says, "In a patient of mine where there was an aperture of the stomach, the symptoms were these: I had never seen her before, but she was said to have been long dyspeptic, and she was tall and very spare; one day after dinner, she was seized with a sudden pain in the stomach, and it was impossible for me to tell whether it was more than a spasmodic pain, for it was not aggravated by pressure; I gave her laudanum, of which she took sixty drops, and finding no relief, she took more, and so she went on, till in a few hours she had taken three hundred drops; and, therefore, it is not cor-

rect to say that the pain never ceases. I afterwards found some cases published in France, and also one by Dr. Cormic Neal Smyth, in which the pain went away; and, therefore, you are not to be sure, that the stomach and intestines are not ruptured because the pain ceases; after twelve or eighteen hours my patient again had pain enough, for the whole of the peritoneum became inflamed together, which could not be removed, and she died."*

The pulse presents very great varieties, especially shortly after the attack; in some cases, it is at first little, if at all, affected, either in point of frequency, or strength; and in these cases it is only after the peritonitis, which results from the effusion of the contents of the stomach into the abdominal cavity, has considerably progressed, that the pulse gives indication of being affected at all; then rising in point of frequency, and falling as regards strength, it will always be observed that once it becomes affected, its tone and strength gradually fail; so that a small, weak, and fluttering pulse is another symptom of perforation having taken place. It will, of course, be inferred, that the action and power of the central organ of circulation being impaired and diminished, the function of the lungs (owing to the intimate connexion of the latter with the former) will also be embarrassed; accordingly, we find *dyspnœa*, more or less severe, to be always present, at one or other of the stages of this affection; unless, where such an immediate change is effected, upon the nervous and sanguineous system, (owing to the effusion of the stomach'scontents into the peritoneal sac,) as precludes the possibility of the action of the heart being continued; consequently death takes place in a few minutes.

The *intellectual faculties* are, in general, perfectly active, nay, in some instances, seem more exalted than formerly; this, however, is not uncommon in cases of simple peritonitis, of which affection it may be said, that those who suffer from per-

* Medical Gazette, vol. xii. p. 522.

foration of the stomach eventually die. Nature, in these instances, usually apprizes the sufferer of the imminent danger in which he is placed; and it needs not the declaration of the physician to assure him, that death is impending, for the sensation of speedy and approaching dissolution is, in general, perceived by him, and he finally expires, (though in agony of suffering,) yet, in the calm and unruffled composure of intellectual serenity.

The *state of the tongue*, as characteristic of this affection, is not to be relied upon; for, however much importance we may attach to its appearance in common with affections of the stomach, in this peculiar affection it seldom presents any appearance worthy of notice; even although a degree of chronic inflammatory action has proceeded. M. Andral's experience coincides with this statement.

Deglutition is frequently impaired.

Abdominal tympanitis may be said to be an invariable attendant upon this accident, it supervenes almost immediately upon the perforation taking place, and gradually goes on increasing till the death of the patient.

The *state of the bowels*, it will be observed, by referring to some of our cases, is very variable, in some, being readily operated upon by medicine, whilst in others, notwithstanding the exhibition of various laxatives, no stool could be obtained. And now that we have reviewed a few of the more prominent symptoms attendant upon this affection, it will readily be perceived, that (though occurring in various constitutions) in the generality of cases, the symptoms usually developed are severe and sudden pain, referrible to the epigastric region, vomiting, some degree of dyspnœa, weak and fluttering pulse, tympanitic distention of the abdomen, countenance anxious, and bedewed with cold and clammy perspiration, extremities cold from diminished capillary circulation, with clear and unclouded intellectual perception, till death closes the scene. It is very difficult to say, what particular constitution renders individuals most

susceptible of this disease, seeing that we find persons of every temperament numbered amongst its victims. Were we, however, to advance an opinion as to the *class of society* most frequently the subject of perforation of the stomach, we should be inclined to name that of *servant girls;* for we think it stands as an indubitable fact, which the experience of physicians will not gainsay, that young female servants are most prone to this disease. The fact, however, we confess, is one of very difficult, or satisfactory explanation.

Upon analyzing the history of such cases, either here or elsewhere, it will generally be found, that the immediate rupture of the stomach from ulceration has taken place either during or subsequent to the partaking of a hearty meal; and it is very natural to suppose, that when nothing but the serous membrane, and, perhaps, superincumbent cellular tissue, intervene between the cavity of the stomach, and that of the abdomen, the filling of the former, either with solids or fluids, should accomplish a perfect communication between both, the result of which usually is, the translation of the contents of the stomach into the peritoneal cavity, from which occurrence immediately arise the whole host of symptoms attendant upon perforation of the stomach. It seems very remarkable, *how rapidly* after this has taken place, the symptoms of violent and acute *peritonitis* supervene; for no sooner than the sensation of something internal having given way (which is often experienced) is perceived, than these are manifested; and it is to be remarked, that the evidence of the violence of inflammatory action is not to be estimated in proportion to the interval of time which elapses between the perforation and the occurrence of death; for on dissection it will be frequently found, that where only twelve hours have intervened between the fatal attack and death, the peritoneum and intestines present a much greater degree of inflammatory action, and its products, than will be found in a case where double that space of time has elapsed. This peculiarity may, perhaps, in some instances be in part

accounted for by the immediate contact of irritating fluids to the surface of the peritoneum itself; for the occurrence of perforation is so sudden, and the prostration of animal strength shortly afterwards so complete, as to induce the friends of the patient, previous to medical aid being sought, injudiciously to administer *brandy*, or some other stimulant, with the vain hope of relieving pain and invigorating the system, which passes directly through the perforation into the peritoneal sac; hence, the severity of inflammation in some cases, in comparison with that witnessed in others. The parietes of the stomach may be entirely ulcerated, and yet no escape of its contents take place into the abdominal cavity; for during the process of inflammation it may contract adhesions to the liver, or neighbouring parts, which will serve the purpose of sealing up, as it were, the perforation when that takes place. The opening may take place into the *colon*, and yet life be prolonged for a considerable time, as happened in an interesting case which occurred in the practice of our esteemed friend, Dr. Combe, of Leith, or it may happen that the perforation takes place in the usual way at first, but owing to the efforts of nature, the more serious symptoms are for a time arrested, until the barrier which she interposes, in the form of coagulable lymph, is again destroyed, and the disease eventually runs its ordinary course. Perforation of the stomach, when the result of external injury, is not necessarily fatal, as several very interesting instances of this nature are now recorded, where the patient lived for years after the accident. Among these cases we may place in the foremost rank that highly interesting one, which occurred to Dr. Beaumont, from which such a mass of valuable information has been obtained, relative to the function of the stomach, as to render it altogether one of immense importance, not only to science, but also to the preservation of individual comfort and health. We do not intend, however, entering upon a consideration of perforations of this nature, as it would not only be foreign to our original design, but would

also trespass too much upon the time of the reader. The peculiar appearance, which the tissues surrounding perforation resulting from ulceration, usually present, as well as other circumstances therewith connected, we reserve for another part of this paper.

VARIETY III.—*On Perforation of the Stomach, from the direct Application of corrosive or irritant Poisons to its Mucous Membrane.*

Having already dwelt so long upon a consideration of the two preceding varieties, we shall be very brief in our observations upon this third and last variety, which, notwithstanding, is one of very great importance, whether we regard it as affecting science, by enabling us to distinguish between it and perforations resulting from very different causes or in a medico-legal point of view, as affecting, not only the character and reputation of the medical man, but, what is of far more importance, the innocence and lives of those who may suffer from his testimony; hence the necessity which exists for every member of the profession to be in possession of that knowledge, (in so far as it is at present known,) of the appearances which the stomach presents in cases of this variety, when contrasted with instances of either of the preceding two, in order to enable him to exercise his vocation, either with credit to himself, or advantage to the community at large. There cannot be a doubt, but that in earlier times, the character and life of many an innocent individual have been sacrificed on the part of medical evidence, owing to a want of that extended knowledge which we now possess, and by the exercise of which, their character would have received no stain, and their lives would have been honourably spared. For the purpose of shewing the vital importance of being aware how to distinguish one kind of perforation from another, let us quote a case illustrative, from Dr. Christison's able work on Poisons: "A young woman, near Montargis, having died of a short illness, and a

large erosion having been found in the stomach after death, six practitioners, on a view of the parts, and without referring to the antecedent symptoms, or attempting an analysis of the contents of the stomach, declared that she died of the effects of some corrosive poison. The husband and mother-in-law, against whom there does not appear to have been a shadow of moral evidence, were therefore imprisoned, and subsequently tried for their lives; luckily, however, an intelligent physician of the town saw the error of the reporter, and after vainly endeavouring to persuade them to revise their opinion, was the means of the case being remitted to the medical faculty of Paris; that distinguished body, with Professor Chaussier at its head, gave a unanimous and decided opinion, not only that there was not any proof of poisoning, but likewise, that the woman could have died of nothing else than spontaneous perforation. The leading features of the medical evidence in the case will at once shew, how indefensible the conduct and opinion of the original reporters were; the last meal taken by the woman before she became ill, and the only one at which poison could have been administered by the prisoners, was her supper, her illness did not begin till past six next morning; the symptoms were, mortal coldness, fainting, general pains, headach, pain in the stomach, purging, and colic, without vomiting, and she died after twenty-four hours' illness. The morbid appearances were, general redness of the stomach, softening and pulpy destruction of a third part of its posterior parietes; and nevertheless, the presence in the stomach of a pint and a-half of fluid matter, evidently the remains of soup taken by the woman after she felt unwell. On the decision of the Parisian faculty, the prisoners were discharged, and the original reporters were deservedly handled with great severity in several publications that appeared not long after."*

In connexion with this variety, we propose to treat very

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* Christison on Poisons, p. 110, 1829.

generally of the effects of poisons, belonging to the irritant and corrosive classes, upon the texture of the stomach; and seeing that the exhibition during life of substances belonging to the former class (in comparison with the latter) produce such organic lesion upon the tissues of the stomach, as to cause general destruction and disorganization of the whole of its tunics, and consequently perforation, our remarks must chiefly be confined to the class of corrosive poisons.

Morbid Appearances.—From what has been repeatedly observed by various authors, both in the human body, as well as in the lower animals, where poisoning had been effected through the agency of substances belonging to the irritant or corrosive class of poisons, we feel justified in stating, that evident marks of increased action of the blood-vessels of the stomach, will always be found where the quantity of the poison has been such, as to exercise its specific effects; numerous dark red spots of extravasated blood may be visible either under or within the villous coat, with or without abrasion: the other portions of the alimentary canal frequently manifest the same appearances, and it must also never be forgotten, that as corrosive poisons, if sufficiently strong, exercise a local influence upon whatever texture they come in contact with, a strict and accurate examination, not only of the stomach, intestines, and gullet, is necessary, but also a careful and attentive observation of the state of the lips, fauces, and lining membrane of the mouth, for, in the passage of the poison into the stomach, these parts occasionally suffer, the inner membrane of the gullet has been found so softened, as to peel off in shreds with the greatest facility. Such may be said to be the more superficial changes, which take place in the alimentary canal, but in more direct reference to our subject, we would observe, that the administration during life of substances belonging to the two classes of poisons now under consideration, has the effect of inducing such complete disorganization of the coats of the stomach, as to produce perforation of this viscus. Let us solicit attention to the appeances found in the bodies of

several individuals, to whom the *corrosive sublimate* had been administered, and which are faithfully delineated by Mr. Valentine, in whose practice they occurred; among the cases is one, where a mother had exhibited the drug to her own children as well as to herself: we shall not occupy time by referring to the symptoms, but shall at once pass to the *post mortem* appearances. In one, the membranes of the brain were in a high state of inflammation, the medullary substance oozed red blood, the peritoneum was highly vascular, omentum nearly obliterated, peritoneal surface of the liver injected, mesentery inflamed, the stomach contained a pint of bluish matter, in the cardiac portion, there was a *black circular patch*, the kidneys were inflamed, and the urinary bladder was corrugated to a small size, and empty. In *another*, the same *black circular patch* was observed; the stomach when opened was of a deep scarlet tinge, and the edges of the patch, when washed, were jagged. In a *third* there was great abdominal effusion; a *black circular patch* in the cardiac portion of the stomach, its mucous coat of a deep scarlet hue, its large curvature yellow, livid, and friable, and the urinary bladder small and contracted; and *lastly*, in the mother, aged 49 years, there was found the same *black circular patch* passing through all the coats of the stomach, and its mucous surface presented a crimson hue. Mr. Valentine, in talking of the appearance which these black patches presented, says, " it cannot be better compared, than to a piece of leather burned with a red hot coal."* The *post mortem* appearances, also observable in cases of poisoning from oxalic acid, are worthy of notice; these are well pointed out in the able investigation of Drs. Christison and Coindet, into the effects of the poison of the animal economy.† In their experiments upon the lower animals, they found (generally speaking) the epidermis of

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* Edinburgh Med. and Surgical Journal, vol. xiv. p. 468.

† An Experimental Inquiry on Poisoning by Oxalic Acid, by Drs. Christison and Coindet, 1823.

the stomach sometimes presenting every where a yellowish brown colour, being sometimes brittle and less adherent; its porous structure, however, was unaltered; sometimes the stomach contained a quantity of thick coffee-coloured fluid; the villous coat, after being found every where chequered with angular prominent specks of a bright scarlet colour, confined here and there to the epidermis, but generally extending to the corion; the posterior surface of the villous coat was sometimes interspersed with lines of black granular extravasation, prominent, but not extending deeper than the villous coat; abrasion of the epidermis was also frequently seen, but in addition to all these, perforation of the entire coat of the stomach has not unfrequently been met with, upon dissection of those who have died from the effects of the poison, and has been, accordingly, detailed by authors, as a seeming change which takes place during life. In connexion with this we shall have occasion, towards the close of this paper, to make a few observations.

Perforation also results from the action of the strong mineral acids upon the texture of the stomach. In a case related by Orfila, where a woman had swallowed a large quantity of nitric acid, upon dissection "the stomach presented in the bottom of its great extremity *three openings*, near to one another, of the size of a piece of three francs, (about the size of an English half-crown piece,) with the edges worn very thin, or rather dissolved, it was very thick and contracted through the rest of its extent."* Sulphuric acid, also, produces such deep disorganization of the coats of the stomach as to induce perforation of the viscus. Dr. Bateman relates a case, where through mistake a quantity of this acid was given by a mother to her child, which shortly produced death; and upon dissection, the omentum was converted into a black, pulpy mass, and an aperture about three inches in dia-

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* Orfila's Toxicology, vol. i. page 339.

meter existed in the stomach, the edges of which were thick, and of a dark brown colour.*

Arsenic, which Dr. Christison does not consider as a corrosive poison, has been said by various authors to exert such an action on the stomach as to produce perforation also. This effect, however, as consequent upon the exhibition of any of the preparations of arsenic, is extremely rare, the appearances upon dissection rather belonging to irritation. Dr. Christison, however, relates a case, where perforation of the stomach resulted from the exhibition of this poison. As the history of the case is long, we shall omit notice of it, and merely allude to the appearances observed upon dissection. " On opening the abdomen they found about a pint of red coloured liquid in the cavity of the peritoneum, a small perforation on the anterior surface of the stomach, through which a small quantity of black fluid escaped ; the external surface of the intestines red, and highly vascular, the other viscera healthy. The stomach contained a thick, opaque, brownish-black liquid, and a little solid vegetable matter; its inner surface was very vascular, and marked in different places with dark brown spots of various sizes, and the villous membrane was abraded here and there; the intestines were internally very red, and quite empty."† A portion of the stomach, along with the perforation, was sent to Dr. Christison for examination, and, by chemical agency, arsenic was detected. Dr. C. states, that " the aperture in the peritoneal coat, which was about the size of a pea, was surrounded by a dark, ragged margin, and the inner coats were more extensively destroyed around it." The more common appearance, however, is that of simple irritation, such as increased vascularity over the greater portion of the inner surface of the stomach, and sometimes, of the œsophagus; black patches on the villous coat, arising from extravasated blood into

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* Edin. Med. and Surgical Journal, vol. x. page 257.

† *Ibid.*, vol. xxix. page 25.

its texture; and sometimes small abrasions, or ulcerations, having an inflamed areola, or margin, surrounding them. The pleuræ, diaphragm, intestines, and external organs of generation also, not unfrequently present decided evidence of irritation. Perforations are also effected by the compounds of copper. M. Orfila, in enumerating the "lesions of texture produced by verdigris," says, "when death takes place in a few hours after taking the poison, the mucous lining of the stomach and intestines is found to be inflamed and gangrenous.* Sometimes the inflammation is communicated to all the coats of these viscera, and sloughs are formed, which are quickly detached, and leave openings through which their contents pass out and are effused into the cavity of the abdomen."† It is needless to occupy time by detailing, *seriatim*, all the substances belonging to the two classes of poisons, which we have been considering, and which can produce lesion of the stomach to such an extent as that perforation shall be the result. We conceive that, in connexion with our subject, sufficient evidence has already been adduced, for the purpose of proving that some of the simple irritants, and most of the corrosive poisons, are able to exert such an action on the tissues of the stomach, as that *perforation* of this viscus is the consequence.

Comparative analytical Inquiry as to how far Perforations from Gastric Juice, Perforations from simple Chronic Ulcerations, and Perforations from the direct Application of irritant or corrosive Poisons to the Mucous Membrane of the Stomach, differ from, or agree with, one another.

In perforations arising from the action of the gastric juice, it will be expected, that as such are not the result of a vital in-

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* Probably simple black extravasation.

† Orfila's Toxicology, vol. i. page 224.

flammatory process, no evidence will be found of active congestion having existed, either in the manifestation of fine network of vessels surrounding the opening, nor of any more characteristic products of inflammatory action, such as coagulable lymph, or pus. Accordingly, such is the case; for in the description given of this peculiar form of softening, and disorganization of the coats of the stomach, by all authors who do not view it in the light of a morbid change, induced in the living system, and recognizable by particular symptoms, no mention is made of any such appearance as we have now alluded to having been found; but on the contrary, they are disposed to regard, as one of the surest, and least erring characters, by which to distinguish and set apart "Hunter's digested stomach" from all other perforations of this viscus, the facts of the non-appearance of active congestion, or the development of any of its products. And if the testimony of the author of this paper was necessary to confirm in the least their views in this respect, it certainly would not be wanting; as, in so far as pretty extensive experimental inquiry upon the stomachs of the lower animals is concerned, his experience coincides in the main with that of previous observers. Not unfrequently, in the stomach subjected by experiment to the agency of the gastric juice, we have found the mucous membrane present, in addition to erosion or perforation, distinct patches of red coloration; these patches vary not only in respect to size but also in intensity of colour; for from the light pink they will be found to assume the rich crimson colour. These, in our opinion, admit of easy explanation. One of the great distinguishing marks between them and patches of coloration, resulting from inflammatory action, is the following;—in the former you are never able to satisfy yourself of the presence of distinct ramifications of blood-vessels in the mucous membrane; whilst in the latter, (or coloration resulting from increased action,) you almost invariably can detect a fine arborescence of distended capillaries; in short, the one is the *indirect* result of passive,

whilst the other is the *direct* consequence of active congestion. These *pseudo*-morbid patches are invariably situated over the track of blood-vessels of a pretty considerable magnitude, (these vessels being at the time of the animal's death in a state of turgescence, or congestion, owing to the activity of digestion.) Now, from experiments which have been elsewhere instituted, it has been found, that once death has taken place, that peculiar power which the blood-vessels formerly possessed, of retaining within their own parietes the blood by which they were distended, becomes in a manner lost, or, at least, so far impaired as to permit the transudation of a portion of the colouring matter of that fluid; owing to which circumstance these tissues in immediate contact with the vessels are stained and reddened. We have this law, then, operating in this particular case; for wherever the large blood-vessels ramify upon the stomach, or between its tunics, there do we find the mucous membrane in some parts presenting more or less the appearance of the coloration in question; nay, so far has this transudation sometimes been carried on, as not only to impart a degree of coloration to the mucous membrane, but even to throw out a quantity of fluid, grumous-looking blood on the surface of these patches themselves. Again, if what we have observed in the lower animals may be extended to man, we would state, that another peculiarity, distinguishing this *first variety* of perforation from the two succeeding, is to be found in another peculiar appearance which the mucous membrane presents during the process of this gastric softening. For, in all the experiments which we have been led to adopt, we have almost invariably found, that when perforation had taken place, upon laying open the stomach its mucous membrane was not only entirely detached in all those parts where the gastric fluid had been in contact with, but also large masses of it were found in a corrugated form, lying among the *ingesta*. From the peculiar texture of the epidermis of the stomach there is no difficulty in always determining upon its true nature, notwithstand-

ing it be found in this situation. Upon examining these masses, then, with the utmost attention and nicety, not a single vestige or evidence of their having been the seat of vascularity will be perceived; for they are always of a uniform pale colour, somewhat resembling a layer of elastic gluten obtained from the chewing of common wheat. Although we have only found this state of the mucous membrane in the last stage, or that of *perforation,* yet we apprehend that it exists prior to this; for the purpose of shewing which, we think we cannot do better than quote Dr. Carswell's delineation of the appearances which the digested stomach presents in all its stages. "In the first stage, the mucous membrane, which is that which is first dissolved, presents a slight diminution of consistence, and has acquired a certain degree of *transparency;* when seized, it breaks immediately, or is crushed between the fingers into a soft pulp. In the second stage, the membrane is seen lying like a quantity of albumen, covering the sub-mucous coat, and can be wiped off or removed by a bit of cloth, or a stream of water. In the last stage, the mucous membrane has entirely disappeared to a certain extent, thus leaving its sub-mucous coat denuded, which is recognized by its grey, silvery aspect; the same degrees of softening are observed in the other tunics of the stomach."* Dr. Carswell here admits the disappearance of the mucous membrane in the last stage, at least its disappearance from the sub-mucous coat: but he takes no notice of its being afterwards found in isolated masses in the cavity of the stomach. Now, it was in the last stage that we particularly observed, in common with Dr. C., this abrasion of the mucous coat; but, in addition, we found the appearance which we have now described. From the description Dr. C. gives of the second stage, we conceive, that the separation of these masses is effected then; for he says, that "in this stage the membrane is seen lying like a quantity of albumen," &c., from which we would con-

* Carswell's Illustrations of Disease, Fascic. 5th.

clude, that these portions of separated membrane do exist prior to the last stage.

When by the agency of the gastric fluid the other coats of the stomach are dissolved and perforated, the opening which is thus effected is for the most part single, and is situated in that particular portion of the stomach, which, owing to the posture of the body, has assumed the most depending position; and simply, because the fluid by its own weight gravitates there. In all the cases which we have either seen or read of, (except when the distend edcolon, or other causes, tended to alter the natural position of the stomach,) the situation of the perforation was in the fundus, or larger curvature of the stomach, with the exception of the celebrated case of Miss Burns, for the supposed murder of whom Charles Angus, Esq., stood his trial, and was acquitted;* but even in this case, as well as, perhaps, others, a sufficient cause might be assigned for the natural relative position of the stomach being interfered with.

Let us now compare the state of the mucous membrane, as well as the situation of the opening in cases of the *second variety*, or perforation resulting from simple chronic ulceration. Here we never find the particular appearance of the membrane which we have described as belonging to the first variety. Most unquestionably we do find portions of this membrane removed; but then this occurs from ulcerative absorption, and no trace remains behind. These solutions of continuity in the mucous membrane, besides, are confined to well defined spaces of corresponding ulceration, the intervals between which, moreover, are in no way denuded of their mucous covering. Generally surrounding the perforation of this second variety, we observe most unequivocal evidence of a previous inflammatory action having existed, either in the manifestation of increased vascularity, in the form of a fine net-work of vessels, or in the more indubitable appearance of some of

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* Gerard's Vindication of his Opinion in Miss Burns' Case.

the more ordinary products of inflammation, such as hardening and induration of the tissues immediately around the opening, or in both. While the simple appearance of congested blood-vessels is not of itself sufficient to lead one to ascribe a perforation to an inflammatory cause, neither, on the other hand, is the universal paleness of the mucous membrane sufficient to cause one to say that the perforation is not the result of that process; for, on the one hand, the congestion may be simply passive, whilst on the other, the universal paleness of the villous coat is not unfrequently exhibited in genuine cases of perforation from *vital* ulceration. The mucous membrane in the second variety may be hypertrophied, or it may be of the natural thickness throughout. In the latter case, upon removing, or cutting through, the subjacent tissues, more particularly the subcellular, may be found to have acquired an unusual degree of thickness, and even sometimes to be the nidus of accidental deposit, all of which appearances favour the idea of a previous chronic gastritis having existed. For M. Andral has shewn that the mucous membrane may remain seemingly intact after having been the seat of inflammation, which, passing to the other tissues after its resolution in the mucous coat, effects the changes now mentioned. Very generally the mucous coat, for some distance around the perforation of this second variety, presents a brown colour, which may either terminate abruptly, or be insensibly lost in the natural colour of the membrane.

The mucous covering, on the contrary, of a stomach which has been the receptacle of any of the corrosive, or irritant poisons, presents a different aspect from any of the preceding two varieties; the exhibition of such during life often produces perforation and destruction of the coats of the stomach; some, by a chemical; others, by a mechanical mode of action. We have already alluded to the general effects of oxalic acid upon the stomach, but there is a *peculiar* effect superinduced by this poison which cannot be too well known, an effect which the vigorous

and close researches of Drs. Christison and Coindet have brought to light, and which accounts most satisfactorily for some circumstances in connexion with poisoning from this acid, which previously were but ill understood. It may be said, that *vital perforation* of the stomach does not result from this acid; that is to say, that though frequently, upon dissection of those who have been poisoned by this acid, large perforations may be found; nevertheless, these perforations are only the indirect result of the exhibition of the poison; it has been distinctly proved, that even the administration of concentrated oxalic acid produces, during life, only a "brittleness," or solution of the epidermis of the stomach, which will be found to be the case, provided the body be examined immediately after death; for in cases where the same amount of poison may have have been taken, provided the examination be delayed for some hours, then not only will the mucous coat but the other tissues may be entirely perforated; this then is to be regarded as a post mortem appearance, the oxalic acid only affecting *so powerfully* dead tissues.

Generally speaking, in cases of the third variety, in addition to the disorganization and destruction of the various coats of the stomach, the mucous membrane in particular presents throughout an increased vascularity. From its natural pale, roseate colour, it assumes sometimes a crimson, and at other times a scarlet hue, here and there dark patches of extravasated blood may be seen; abrasion may also take place in isolated portions of this membrane, with evident marks, however, of increased action, and without being simply confined to the most dependent position of the stomach, two circumstances distinguishing these abrasions from those produced by the gastric juice; sometimes also, the external serous membrane manifests inflammatory appearances.

The *appearance* and *position* of perforation, caused by the chemical action of the gastric juice, may now be considered in connexion, or comparison with those produced by other causes.

1st. The opening affected by the gastric juice, may be said

to be in general always single; although at some distance from the main perforation, the coats of the stomach may have become so thin and attenuated, as to give the appearance of an irregular, worn aperture, as it were; the appearance of this opening then, is never what may be called regular; the parietes of the stomach are in general thinned and somewhat softened for a certain space around it, and its edges, or margins, are, as it were, fringed with ragged tendrils, or flocculi; these flocculi, or prolongations, seem to be the remains of the serous, muscular, and sub-cellular coats; the former coat generally extending beyond the others, whilst the inner, or mucous membrane, does not seem to enter into the composition of these tendrils at all. A bluish-white, semi-transparent colour, extends for some space around the opening, gradually losing itself in the natural colour of the tunics, whilst, in other cases, this bluish tint stops short abruptly, leaving a well-defined, somewhat circular or elliptical zone surrounding the perforation. The mucous membrane may be either softened and destroyed around this opening, so as not to present a well-defined edge, or it may present an almost regular margin surrounding the roots of the prolongations before mentioned. Around the digested opening no trace of inflammatory appearances is ever found; and though various shades of redness may be in some instances perceptible, yet such can hardly ever be confounded with a real active state of congestion, as from what we have already stated, with regard to the difference subsisting between them, the one may readily be distinguished from the other. Most of these appearances will be beautifully seen, by referring to some of the specimens of the digested stomachs contained in the museum of the Royal College of Surgeons, Edinburgh.

With regard to the *position* of these apertures we would say, that, both from a knowledge of the agent which produces them, and in accordance with the principles of gravitation, of necessity, they must exist at the most dependent part of the stomach; accordingly, it is at the splenic end, or fundus of the sto-

mach, that under usual circumstances they are generally perceived. When we employ the term, *usual circumstances*, we of course infer, that no fortuitous or accidental circumstance shall exist, to derange or in any way interfere with the natural position of the stomach; for, it must be obvious, that excessive enlargement of the spleen, unusual distention of the colon, or other accidental circumstances being in existence, may materially tend to alter the natural relative situation of the stomach. There are few instances, we apprehend, of the stomach undergoing softening and destruction from the chemical action of the gastric juice where the position of the perforation differs widely from the situation which we have assigned to it, agreeably to the recognized law of gravitation, (if we except the famous case of Miss Burns already alluded to, and one detailed by Mr. Watson in his "Medico-Legal Treatise on Homicide," where the medical evidence went to shew, that the perforation was the result of erosion after death by the gastric juice, although from appearances, others might have readily referred it to another cause. The case is one of extreme interest, and will repay perusal.*

2ndly. The appearance of the perforations resulting from chronic inflammatory action, is such as cannot be well confounded with those of the first variety, which, it will be remembered, we characterized as being one of an irregular form; the one now under consideration, we would say, is always regular in its shape; unlike the former, there may be more than one well-marked and distinct perforation, but more commonly we find but one; this *one* possesses characters peculiarly, as we conceive, belonging to itself. In the first place, it may appear as if a portion of the entire thickness of the stomach's coats had been punched or cut out by the agency of some sharp instrument of an oval or elliptical shape, so smooth and regular are its edges, and so perfectly ovoid, or elliptical is its form. The internal edges of perforations of this nature, are generally smoothed by

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* Watson on Homicide, p. 190.

that sanatory process which nature attempts, to restore the breach which she has originally made. Sometimes the edges present little rounded granulations, or prominences, in the centre or sides of which the bloody mouths of small vessels may be distinctly recognized; but more generally, instead of presenting the appearance of an opening, caused, as it were, by some sharp instrument cutting regularly all the tunics of the stomach, at the same time and of the same size, the extent of the disorganization of the tissue is greater internally than externally, that is to say, the external opening or perforation, by means of which the contents of the stomach are effused into the abdominal cavity, is small when compared with the zone or ring of ulceration which the internal mucous membrane is the seat of; for we find in these cases, that a certain degree of ulceration has taken place in the villous coat, forming, as is often remarked, a pretty well-defined circle; then the ulcerative process having extended to the sub-mucous or cellular coat, *another* zone or circle is observed, less in diameter and circumference than the former, and so on, as each successive tunic becomes the prey of ulceration, until we arrive at the most external or serous coat, when we find the diameter and circumference of the circle to be least of all. It does not always follow, however, that the real perforation or rupture of the serous membrane is perfectly circular; for, in some instances while it may be so, in others it is elliptical, or was slightly irregular; but a very frequent appearance which this membrane is seen to present, consists in its extreme state of tension around the opening, so much so, that the slightest touch of the edge of a scalpel causes it instantly to give way. This state of matters *never* takes place in the perforation caused by the gastric juice; then, again, as we have previously observed, we have most unequivocal proof of inflammatory action having previously existed, as is evidenced by the thickening and induration of the tissue surroundiug the opening for some space, the brown coloration of the mucous membrane, and not unfrequently a fine net-work of vessels ramifying around

the borders of the perforation. In one case a degree of emphysema was present around the opening; but this we are disposed to regard as pseudo-morbid, or *post mortem*. The *position* of perforation belonging to the second variety, varies as much from that of the first as do its other distinguishing characters differ from that of the latter. It will be recollected, that we stated, when speaking of the position of the perforation resulting from the gastric juice, that it generally occupied the fundus, or large curvature of the stomach, here, however, the very opposite is the case, for the openings caused by ulceration, although of course they may vary, yet are usually situated in the *smaller curvature*, and towards the cardiac extremity of the stomach, sometimes occupying the superior, sometimes the inferior surface of this viscus; and often, as taken notice of by Dr. Craigie of Edinburgh, the one-half of the ellipse formed by the perforation being situated on the upper, whilst the other is situated on the under surface; one exact half belonging to the superior, and the other to the inferior aspect. Thus then it will be observed that great and distinguishing marks exist in reference to the two varieties, of which we have imperfectly treated, by which each may readily enough be referred to its own cause.

3rdly. It now remains, that in accordance with the plan which we have adopted, the state of perforation effected by the corrosive or irritant poisons be briefly considered. With regard to the appearance which corroded apertures present, it may be remarked, that although in general it is not easy to ascribe a corroded aperture of the stomach to the actual agent which has produced it; yet, in *some* instances, the appearance may be such as to enable us, with tolerable accuracy, to indicate the agent, even although none of the substance may, upon analysis of the contents of the stomach, be found in connexion with this. And, in comparing one perforation with another, Dr. Christison states, " now as to the differences between the gelatinized perforations, and the perforations caused by the corrosive poisons it may, in the first instance, be observed, that the margin of a

corroded aperture is commonly of a peculiar colour; for example, *yellow*, with nitric acid; *brown*, with sulphuric acid, or the alkalies; *orange*, with iodine. But a much better, nay, I believe, an infallible criterion, and one of universal application, is the following: either the person dies very soon after the poison is introduced, in which case vital action may not be excited in the stomach, or he lives long enough for the ordinary consequences of violent irritation to ensue. In the former case, as a large quantity of poison must have been taken, and much vomiting cannot have occurred, part of the poison will be found in the stomach; in the latter case, the deep vascularity, or black extravasation round the hole, and in other parts of the stomach, will at once distinguish the appearance from a spontaneous aperture."* Whilst, then, the black extravasation, and other appearances, may serve to distinguish a corroded aperture from one of the two preceding varieties, the second variety may also be distinguished from the third by the unusual paleness which the mucous membrane usually presents; but, above all, by the development of some of the products of chronic inflammatory action, such as thickening and induration. With regard to the position of corroded apertures, though this may, of course, vary, yet, nevertheless, it may be said (generally speaking) to take place at the basis, or fundus of the stomach; and the number of perforations resulting from corrosions frequently exceeds one or two, both or all of which presenting in their appearance an uniformity of progress in the process of disorganization, constitute a striking difference between them and perforations of the second variety, which occur much more frequently in the isolated from; it also rarely happening, that when two chronic inflammatory ulcers coexist, the ulcerative process going on in each should be so exactly proportionate as to effect perforation in both at the same time. But still the evidence derived from appearance and position

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* Christison on Poisons, page 109.

alone, though sufficiently strong to warrant any man in his own mind to refer a perforation to its true cause, is, nevertheless, with regard to the third variety, but negative; and it is only by the aid of chemistry that, in cases of corroded apertures, we are enabled, with a degree of accuracy, precision, and certainty, to affirm that poison has been the agent to induce the change. In conclusion, we have only to apologize for the very imperfect manner in which we have treated this important subject; and to express a wish, that those more able to it justice will follow out what we, in these preceding pages, have been attempting to describe.

ART. XII.—*On the extremely rare Occurrence of Consumption in Dingle and its Neighbourhood.* By HENRY BLENNERHASSETT, M.D., Tralee.

THE town of Dingle is situated nearly at the western extremity of a peninsula, which extends from Tralee on the north, and Castlemaine on the south, about forty miles due west into the Atlantic Ocean.

This neck of land, the widest part of which does not exceed ten miles, is bounded on the south by the great Bay of Dingle and the Atlantic, on the west and north by the same ocean and the Bay of Tralee; so that except towards Tralee it is entirely surrounded by the sea, and its western extremity projects far into the Western Ocean. That places thus circumstanced derive, from their insulated position, a milder and more equable climate, and are less liable to sudden vicissitudes of temperature, is a fact that no one will venture to dispute. Penzance, on the coast of Cornwall, being somewhat similarly situated, is admitted to be the mildest and most salubrious part of England for pulmonary complaints. Though more than two degrees, however, to the south of the peninsula of Dingle, it is exposed in the winter to the cold winds blowing

from the east across the Continent down the English Channel. and is screened on the north-west from the genial influence of the ocean by Ireland. So it may be fairly presumed that five degrees of west longitude more than compensate Dingle for the two degrees of latitude, and that its winters are milder than at Penzance, and the proofs of this assertion I shall presently adduce.

The town of Dingle is nearly surrounded on all sides by a magnificent amphitheatre of mountains, the highest of which, to the north and east on the land side, perfectly shelter it from the cold winds that usually blow from this quarter. From the south-west, which is the foul weather point in this part of Ireland, it is admirably protected by a very high hill at the opposite side of the harbour, about a mile distant. This hill is more than two miles in length, and forms the promontory which divides the harbour from the open bay of Dingle. To the south the country is more open and level, but gradually rising towards the shore, where the coast opposes to the ocean a stupendous barrier of naked rock, forming an almost interminable line of perpendicular cliffs, varying from one to two hundred yards in height, fully sufficient to afford shelter against the most tempestuous gales that can blow from the quarters of the ocean.

Some may, probably, object, that the vicinity of mountains may render a place unfavourable, as the currents of air which are apt to descend from them in squalls of wind are found to be injurious to delicate lungs. To this I reply, that the Dingle mountains do not approach so closely as to be liable to this objection; and besides, that the town is situated in the valley, and partly on the sides of two hills, which run parallel from these mountains pretty closely together, diminishing gradually like a wedge until they reach the harbour. These hills are crossed by another hill on the upper, or north-east side, and the united effects of the three is to break and dissipate any squalls or currents of air before they can reach the town; so

that on the whole, I may safely venture to assert, that there is not on the surface of the globe a place more perfectly sheltered than Dingle.

Having resided there for fifteen winters, I can testify that a fall of snow is rather a rare occurrence, and that it seldom lodges more than a few hours, except towards the tops of the mountains. One winter, indeed, I recollect it on the low grounds nearly a week; two other winters it remained two days. Nor is frost ever severe; scarcely ever is the ice on any pond, or even small pool of water, strong enough to support the weight of a man, in so much that a pair of skates would be considered there a real curiosity. It is a further proof of the mildness of the winters, that the people seldom keep their cows *in* there; and I have heard Lord Ventry,* whose place of residence was within two miles of the town, and who died in 1824, at nearly ninety years of age, declare that he never kept a cow or bullock in house. It is a still stronger proof, that the people almost universally shear their sheep a second time on the approach of winter, which, to be sure, may also be a proof of their poverty. This I do not mean to dispute. They are not, however, poorer than in other parts of this county, where they can take no such liberty with the sheep. Some of the mountains near Dingle afford such good herbage that fat sheep are brought from them early in the spring, when it would be rather difficult to get a good sheep on the low grounds without the aid of artificial feeding. Numbers of young cattle and bullocks, until five or six years old, are fed throughout the year on those mountains; nor are they foddered or brought down on the low lands, except on the few occasions when the ground is covered with snow.

As the prevailing winds on this coast of Ireland blow from

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* The grandfather of my excellent friend and relative, the present Lord Ventry, who is one of our few resident noblemen, and to whose liberal support the Dingle Dispensary is mainly indebted for its existence.

the west, loaded with the watery vapours which they absorb in their passage across the Atlantic, and as the first high lands they come in contact with have the effect of causing a deposition of much of this vapour, by an abstraction of caloric, there can be no doubt that more rain falls on the western coast of Ireland than in the midland or eastern side. The snow also, which in the winter is frequently carried along by northerly or easterly winds, becomes thawed on approaching this coast, and descends in the shape of rain, adding to the humidity of the air.

It may be doubted, notwithstanding, whether such an atmosphere is in any degree prejudicial to delicate lungs, where tubercles are in a state of incipient irritability and inflammation, and the inner membrane of the bronchi and air cells, perhaps, also affected with subacute inflammation, it is reasonable to suppose that a dry cold air, would prove more irritating and acrimonious than where the air is warmer, and its oxygenous portion sheathed and diluted with a quantity of watery vapour. Low inland and humid places are supposed by many physicians to be most favourable for the consumptive; and certain it is, that many fenny districts in England, which enjoyed a remarkable exemption from *phthisis pulmonalis*, have, after being drained, become as liable to the complaint as any parts of the kingdom. Neither should it be overlooked, that a very humid atmosphere is not liable to such sudden cooling down on the approach of any cold northerly or easterly winds, the first effect of which would be to cause a large deposition of moisture, which parting with the heat that kept it in the state of vapour, must moderate and partially suspend the cooling process. Though much rain falls during the winter and spring about Dingle, yet from the hilly character of the country none lodges. There is no stagnant water, nor do I recollect that I ever saw a case of regular ague there.

As I cannot, however, expect that my recommendation of Dingle, as a suitable place of residence for those who have a

tendency to pulmonary consumption, will be entitled to any regard, unless I state the facts and circumstances on which it is founded, I premise my remarks by stating, that I was appointed physician to a dispensary established in that town, in the year 1824, and that I continued to reside there till 1839, a period of more than fourteen years.

Having, during a previous residence in Dublin of twelve years, been physician to three dispensaries in succession, viz., the North-west Dispensary in Beresford-street, the Sick Poor Institution in Meath-street, and the Dublin General Dispensary, in which the various forms of comsumption of the lungs formed a large proportion of the cases applying for relief, I was forcibly struck with the contrast presented in my Dingle practice. Having kept a regular register of all the cases that applied to the dispensary, and examined the same accurately, I find that the whole number, during fourteen years, amounted to 163,411, among which I find no more than eighty-five cases of *phthisis pulmonalis* recorded. In other words, the whole number annually admitted on an average was nearly twelve thousand, of whom only six are recorded as cases of consumption of the lungs, that is in the proportion of *one* nearly in every two thousand cases. A proportion lower, I believe, than will be found in any other part of her Majesty's dominions in Great Britain or Ireland.

It must be admitted, however, that a dispensary register, though very exactly kept, can give nothing more than a general view of the frequent or rare occurrences of any particular disease. The names of the same patients may be entered on the books very many times within the year, either from their coming back to the dispensary with different complaints, or from the difficulty of recollecting, among great numbers, those who were previously admitted. The names of those eighty-five consumptive patients I found re-entered on the books several times like others, but as they were the same individuals, and the disease identical, I did not count them as different cases;

and this, I admit, would make some difference, though not a material one, in my general calculation.

Another disease, also comparatively rare in this district, is scrofula, which as it is so frequently connected with, and so often lays the foundation of tubercular consumption, explains in some measure the infrequency of this latter disease; but the comparative exemption from both must be chiefly attributed to the mildness and equability of the climate, produced by the local circumstances I before endeavoured to describe, and the insulated situation of the country. The causes which usually predispose to consumption exist here, indeed, as well as in other places. There is the same amount of general poverty, poor and insufficient diet, a great deficiency of clothing adequate to protect them from the wetness of the climate, and to supply a change when they come home thoroughly drenched. The women and children of both sexes, among the lower orders, go almost universally without shoes or stockings, and the latter mostly bareheaded, and scarcely half clad. Hence coughs and catarrhal complaints are common enough among them, as well as diarrhœa and dysentery, though this last complaint does not generally present that virulent character that it does in many other places. The fishermen form a numerous body here. They are generally sober and well conducted, apply themselves exclusively to fishing; and as they are obliged to encounter a great deal of boisterous and wet cold weather, in the exposed and tempestuous bay of Dingle, are a very laborious and hardy race of men. They are somewhat more comfortable than the country people, and generally change their dress when they come in very wet, and among those men I have met with very few cases of consumption.

But amongst the usual laborious employment to which our poor labourers are habituated, there is one, I believe, almost peculiar to this district, at least I have never seen it practised any where else, and it is hard to say, whether it is more strange, that any portion of mankind could be found willing to submit

to, or that the practice of it does not entail inflammatory affections, and pulmonary disease in particular, on those who pursue it. The practice to which I allude is one of the modes which the farmers' labouring boys, and the general population in the vicinity of the bays and harbours, have for obtaining seaweed during the winter and spring, which are the most favourable seasons. They take a strong square net, about seven or eight yards long, and three or four deep; the two extreme ends are kept extended by a stick equal in length to the depth of the net; selecting days when the wind is blowing fresh and full on the shore, and when, of course, there is a considerable surf, two of these men, one at each end of the extended net, march down the shore into the surf up to the middle, watch the approach of the wave, and at the exact moment of its passing, make a jump upwards, by which they escape being overwhelmed, and on its reflux plunge their nets perpendicularly into the water, and thus intercept and drag to the shore a horseload, perhaps, of the best description of seaweed, with which the wave is more or less charged, but which would, were it not for this simple contrivance, be carried back to the ocean. This they continue for several hours, during the flowing of the tide; and I have frequently seen numbers thus employed, particularly on the strand of Ventry harbour, and more than once at a time when the ground was covered with snow, some of them quite naked, but the greater part of them with their usual clothing on, which on coming out of the water they seldom or never change, but suffer to dry on them.

"Will you take off those wet clothes and put on dry ones when you go home?" said I once to one of those poor men. "God knows, Sir,' was the reply, "it would be hard for me; for what I have now on are the only clothes I have in the world." And this is the case with almost all of them. It may be asked why they would not all prefer going into the water naked, and have their clothes dry when they come out, which I can only attribute to a firm persuasion they feel, that they "will get no

cold out of the salt water." This employment would be very hazardous to men not accustomed to it, as there is much danger of their being carried off their legs by the surf and drowned. I have not heard, however, of any accident of this kind; though when a wave of unusual dimensions, or "a father of a wave," as they call it, comes thundering in upon them, they are sometimes fain to abandon their nets, and make for the shore with all possible dispatch.

As the population is crowded, great labour and unremitting industry are absolutely necessary in procuring manure for the successful culture of that bounteous root on which their very existence depends. Sand and seaweed conjointly afford the best crops; and to obtain the latter, those who cannot afford to buy it, and have no boats to convey it, are compelled by necessity to employ the method I have detailed. "God tempers the wind to the shorn lamb," is a beautiful saying; and assuredly, if the beneficent Creator of the universe did not literally temper the wind to those his poor and shorn creatures, and, moreover, "fit the back to the burthen," by bestowing on them a strength of constitution beyond that of the general race of mankind, they never could sustain the toil, hardships, and continued exposure to the elements, which this employment in particular inflicts on them. It may, perhaps, be allowed to remark, in the way of parenthesis, that it was not long since fashionable among gentlemen of profound sagacity, at both sides of the channel, to accuse our poor people generally of innate idleness, voluntary laziness, and a reluctance to labour for even a full compensation. Heavens! what delight it would give me to see some of those heartless calumniators, by way of punishment, compelled, were it only for a few days, to fish for seaweed in the depth of winter on the strand of Ventry, and when their day's work would be over, be set down to a luxurious dinner of dry potatoes and salt. The few among the ugly caitiffs who would survive the first week of such discipline, would learn a lesson that would do them good for the remainder of their lives, viz., a little Christian charity,

and some degree of respect for the ninth commandment of the decalogue, which, indeed, would seem to have formed no item in their previous code of morality. Having, in proof of the position with which I set out, stated the result of my practice at the dispensary among the poor, during a period of more than fourteen years, I have no hesitation in asserting, that pulmonary consumption is still more rare among the gentry, shopkeepers, and that description of persons who are placed above want, who can afford themselves comfortable clothing and diet, and who are not compelled by necessity, whether sick or in health, to labour for a subsistence for themselves or their families. During my residence in Dingle I recollect no more than five cases in private practice of phthisis pulmonalis. Three of those occurred in strangers, and only two in natives of the place. The first was a young lady who went to reside at a convent in Dingle, and whose liver and lungs were diseased for a considerable period before she went there. Having undergone a slight mercurial course under my care, the liver affection was removed, and the pulmonary symptoms so much improved, that conceiving herself quite well she left the convent and went to Killarney, where she resided about a year. After the expiration of that time she returned to the Dingle convent with a renewal of the pulmonary symptoms, and died a few months after taking the veil. The next was an Englishwoman, the wife of a man in the coast-guard service. She had for some years a chronic affection of the liver, for which she would use no remedy from a dread of getting mercury, and, as often happens in those cases, the disease at length extended to the lungs, and she died with well marked symptoms of consumption. I believe this woman had originally a strong tendency to tubercular phthisis, as four of her sons died of this disease about the age of puberty, of whom only one was residing in Dingle when he got it. The fourth case was that of a young lady, a native of Dingle, who very early was attacked with a profuse hæmoptysis, which caused a fatal termination. The last was that of the late Rev. Dr. Foley, who, though not

exactly a native of Dingle, had long resided there. He had been latterly a good deal on the Continent, and it was at Rome he got the first pulmonary attack. On his return home he was not quite free from cough; and some weeks after, when I was called on to attend him, I found the cough very severe and obstinate, with some symptoms of hectic, and particularly profuse night perspirations. His pulse did not exceed eighty till the following spring, when the complaint became rapidly worse. He now imagined that change of air would be of service to him, insisted on going again to the Continent, and having proceeded as far as Dublin on his way, died there in a few days, about the month of April, 1839. Thus, among the gentry in and about Dingle, the people in business, and the more comfortable class of farmers throughout the whole barony of Corkaguiny, I never knew or heard of any more instances of pulmonary consumption than those I have now recounted, one case only excepted, and that occurred as far back as 1811, in the daughter of a farmer, who consulted me only three or four days before her death.

Previous to the year 1814, there was no resident physician at Dingle, and those who could afford it were obliged to send to Tralee for medical aid. The late Dr. Purdon, who was in practice about forty years, was the physician most frequently called to Dingle, and, on inquiring from him whether he was often consulted by consumptive patients from that quarter of the country, he could only recollect the case of one lady, about twenty years before, who, however, if her lungs were really diseased, must have been cured of the complaint, as she is alive and well at the present moment.

Were I to refer to the testimony of four medical gentlemen, who are at present residing in Dingle, to corroborate the statement I have made, it might be objected, that they practised there but a short time. There are, however, fourteen or fifteen physicians in Tralee, some of whom have been frequently professionally in Dingle, or other parts of the barony, the eastern extremity

of which approaches within a few miles of this town, and I would ask any one of those gentlemen to say, if he ever had a consumptive patient in the barony of Corkaguiny among that class of persons whom I have described. I have, indeed, asked each of them the question separately, and the reply was in the negative.

I think it right also to state, that most of my consumptive patients, who consulted me at the dispensary, held out a much longer time before the complaint terminated fatally than usually occurs, many of the women, particularly, lingered five, six, or seven years; and I know one old woman, whose lungs were highly diseased sixteen years ago, who, however, is still living, and rather better than when I first saw her, and also the wife of one of the coastguard-men, who came to Dingle in a consumptive state more than ten years ago, but who is still living and better than on her arrival there.

There is one circumstance in dispensary practice very unsatisfactory, and it is this, that among the patients who came from distant parts of the country, we can seldom ascertain how the case terminates, as their friends will not take the trouble of letting us know whether they recover or die. That by far the greater part of my eighty-five cases terminated fatally I have not the least doubt. Three or four of them, however, I know recovered, and as one of those cases presented the only instance I ever saw of recovery from the last stage of pulmonary consumption I cannot forbear to record it.

A little girl, nine years of age, of the name of Jane Hanafin, was brought to the dispensary (being too weak to walk) about the winter of 1824; she appeared to be in the last stage of tubercular phthisis, which came on gradually, and was of long standing. She had incessant cough; purulent and bloody expectoration; night sweats alternating with diarrhœa, and was emaciated to the last degree; I merely ordered her some medicine to palliate the most urgent symptoms, and told her mother that I did not think she could hold out longer than a

fortnight. Indeed, so obvious and decisive were the symptoms, that, if I were asked the question, I would have said that nothing short of a miracle could save her. I thought no more of the case till meeting the mother in the street four or five weeks after, I asked her how long the child was dead, she replied, that she was not dead, but, on the contrary, the cough considerably better; but that she got painful swellings in both groins and in both armpits, which proceeded quickly to suppuration, and were then discharging purulent matter very freely. This discharge, from the inguinal and axillary glands, which relieved the pulmonary symptoms so much, I, of course, encouraged, keeping up her strength at the same time. It continued in more or less quantity for some weeks; the cough and other symptoms of phthisis gradually abating, until at length they entirely disappeared, leaving her very weak, and incapable of walking from a contraction of the flexor muscles, which prevented an extension of both legs; this, after some months, gave way; she recovered the full use of her limbs, became strong and hearty, and strange to say, never got any return of the pulmonary attack, and is now a fine and healthy young woman.

It would appear, that in this case a metastasis, or transfer of the disease had taken place, purely from the efforts of nature, or, more properly speaking, that when inflammation and suppuration had occurred in the inguinal and axillary glands, the course of the blood was chiefly directed to those parts to the great relief of the lungs; and, that so much purulent matter was secreted and discharged from those external parts, that the ulcerous action in the lungs was suspended, and time was given to the diseased surfaces in the organ first affected to heal.

This very uncommon and instructive case suggests to us the obvious inquiry—may we not accomplish some good in pulmonary consumption, by endeavouring to imitate the mode in which nature effected a cure in this instance? Is there any description of virus, the inoculation of which could be safely employed with a view to excite inflammation and subsequent sup-

puration in the inguinal, axillary, or other lymphatic glands? The matter secreted in the scald head to which children are liable pretty constantly excites swelling and inflammation in the small lymphatic glands of the back and sides of the neck. May not this fluid be tried, or would it be justifiable, in such hopeless cases, to inoculate with some morbid animal poison, the absorption of which may excite the requisite glandular inflammation; or, if such a virus cannot be discovered, or the application of it be found inexpedient, would not the case I have detailed encourage us to employ counter-irritation more generally and energetically than we do, and establish a very free purulent drain by setons and issues, which may, perhaps, be more effective if applied to parts somewhat remote from the chest, such as the arms, groins, hams, inside of the thighs, &c.? and, finally, the consideration of the case of the girl Hanafin must suggest the propriety of a long perseverance in those remedies, and that we should not confine their use to the incipient stages of consumption, nor be too ready to discontinue them on the plea of irritability, or an apprehension of an excessive drain adding to the debility of the patient, particularly if any abatement in the pulmonary symptoms be manifested during their use.

It is not, however, on the ground of consumption being extremely rare about Dingle, that I would alone recommend it as a place of residence for those who have a tendency to this disease, but I have had positive proof of its salutary effects in several such invalids, whom I advised to spend some time there; and I know one lady who lived there seventeen or eighteen years, during the early part of which time she laboured under tubercular disease of the lungs, which commenced previous to her arrival in Dingle. About ten years ago, she had regular hectic symptoms, with hæmoptysis and purulent expectoration, and was removed to Dublin, which was her native place. She was recommended to avoid the sea coast, and go to Mallow, though it was then the beginning of winter. In this place she became rapidly worse, insomuch, that quite despairing of herself, she at length

resolved to return to Dingle and die among her friends and family. The result, however, turned out quite the reverse of her expectation, for she no sooner reached that dreaded sea coast than her complaint suffered a remarkable abatement, and the pulmonary symptoms gradually improved, even during the winter. Before the following summer her cough ceased, and her recovery was so complete, that she has since borne several children, which, indeed, might have contributed somewhat of itself to the cure. As the proprietors of the town of Dingle do not grant leases sufficiently long to encourage building, the extent of accommodation in the way of lodgings is rather limited. This, however, is the less to be regretted, as I am not vain enough to suppose, that any recommendation of mine could render the place a general resort for invalids. In stating the facts and circumstances I have detailed, my object is to prove to the people of this country, that they have no occasion to send such of their friends, as have a tendency to pulmonary consumption, or are only in the incipient stage of the complaint, either to Mallow or Cove, when they have a place amongst themselves, which I am firmly persuaded is superior to either as a winter residence. Mallow is in the summer and autumn a very desirable place, and the country about it healthy and beautiful. As a winter residence, however, Mallow is objectionable, for the climate there is much colder than that of Cove or Dingle.

Cove is certainly well situated for consumptive complaints, being well sheltered on the north; open to the southern sun; its harbour in fine weather affording the exercise of sailing, which is of all others the most generally salutary in pulmonary disease.

In none of those advantages, however, does Cove exceed Dingle, while the latter from being situated two degrees farther west on the Atlantic coast, and from its insulated and admirably sheltered position, must enjoy a milder and more equable climate in winter: whether its atmosphere or that of Cove is more humid, I cannot say.

ART. XIII.—*A Case of Hæmorrhagic Diathesis.* By S. WILMOT, A. B., M. D., Member and Professor of Surgery in the Royal College of Surgeons in Ireland, and one of the Surgeons of Dr. Steeven's Hospital.

IN the year 1837, a boy of four years of age was brought to my house, in consequence of a bleeding from the palate, just behind the alveolar process of the incisor teeth; a very superficial abrasion of surface could be observed, from which blood continually flowed. The bleeding had existed for four days before I saw him; the blood was very pale, watery, and did not coagulate; pulse very quick, and the entire surface of the body was extremely pale. I applied the nitrate of silver, used pressure, and prescribed the infusion of roses, with sulphuric acid and tincture of digitalis. The flow of blood did not entirely cease for five days. In about two months a small tumour appeared over the right parietal bone; attempts were made to effect the absorption of this swelling without success; it suppurated, broke, and discharged pus. The following day a profuse hæmorrhage took place from the cavity of the abscess, which was arrested by pressure, and no return of bleeding took place after the fourth day. (I did not see him on this occasion.) The mother told me that he soon began to gain strength after this attack. While in this state of improvement he fell, while playing, over a bucket, and received a transverse wound of the tongue, which divided the lingual artery on the left side. After the lapse of two days, he was brought into Steeven's Hospital, and the artery tied immediately on his admission. He had lost a large quantity of blood before he came into hospital, but recovered much sooner than could have been expected, and continued in tolerably good health for about seven months after the accident, when he was suddenly seized with bleeding from the gums of the incisor teeth of the upper jaw, which continued for three weeks. He was now readmitted into hospital, and appeared almost exsanguine, and was obliged to be kept in the hori-

zontal position to prevent fainting. The bleeding resisted all treatment for a long time, and caused much anxiety on the part of the friends, and no little surprise was evinced by them that it could not be stopped. Indeed, in almost every case of hæmorrhage, whether spontaneous or otherwise, there is a great deal of bustle and agitation as long as the bleeding continues, which the practitioner must not permit himself to participate in, if he does he will be thrown off his centre, and lose his character for steadiness. The obstinacy with which the blood flows in such cases, and the difficulty which the practitioner often experiences in stopping it, arise from the change which the blood undergoes, the coagulating principle of which is greatly diminished, the serum being increased in quantity, and the crassamentum much diminished. The treatment adopted in this attack consisted of astringent lotions and pressure applied to the gums; the internal remedies consisted of infusion of roses, sulphate of alum, and tincture of digitalis. On his return home my patient was attacked with fever, accompanied by delirium. After his recovery his parents sent him to the country, where he rapidly improved in health; the recovery was so remarkable that at the expiration of two months he was taken home, all apprehensions of a future attack being removed. The father and mother were, however, sadly disappointed, for he was little more than four months in town when he began to lose his appetite, flesh, and strength. While in this state of declining health he was seized with a pain and swelling in the calf of the left leg. His mother brought him to my house; the swelled parts were black and yellow, presenting all the appearance of an ecchymosis from an injury of some days' standing. I could not discover any vibices or petechiæ. The mother said that she often observed black spots on different parts of his body which soon disappeared. He was free from hæmorrhage. I ordered a cold lotion to be applied, and a mild purgative combined with bitters. The swelling and blackness had scarcely disappeared when he complained of pain in his head, which was succeeded

by a bleeding from both nostrils. This attack of epistaxis was of five days' duration before I saw him. The mother applied several popular remedies at home, and was induced to postpone seeking medical aid from day to day, owing to occasional cessation of the bleeding for short intervals. The blood coagulated this time though the child was very weak and pale. Plugs of coagulated blood were formed now and then in the anterior nares; when this took place the blood passed into the pharynx and mouth. The epistaxis gradually subsided. The alarm which this poor little afflicted boy suffered after every attack of bleeding had not had time to subside, when a violent pain struck him in the left thigh; a swelling of the whole thigh soon took place. There was now no discoloration of the skin; he could not bear the swollen part to be handled in the gentlest manner, nor could he move that limb in consequence of the pain. He lay with the knee bent and the thigh flexed on the pelvis, and complained of starting and throbbing of the limb. There was a high degree of symptomatic fever; pulse very quick and sharp. The arteries about the neck and face pulsated strongly; the skin was hot and dry; the thirst urgent; the tongue foul; the bowels confined; but there was no hæmorrhage. Purgatives were directed; after the bowels were regulated he got saline diaphoretic drinks, cold whey, and lemonade. About the third day the pain abated considerably; the fever and swelling were now a good deal reduced; the limb became black and yellow, presenting an ecchymosed appearance. Before he was sufficiently recovered to leave his bed, the thumb and fore-finger of his right hand became painful and swelled, and in two or three days assumed a black and yellow colour. Since this attack, which occurred about the middle of July, from which period I did not see or hear of him until the 16th September, 1840, he has had no regular medical treatment, and the disease is still unsubdued. I find that he is now afflicted with a diarrhœa, but there is no bloody discharge from the bowels. His mother says that the contents of his bowels flow from him with great force

small quantities of blood come from both nostrils about every ten days. I now observed, for the first time, a few black spots on the trunk and arms about the size of a silver fourpence. I ordered chalk mixture with tincture of catechu and opium; but as this did not produce a decided change in the diarrhœa, I altered the medicine for the decoction of logwood with alum. I have now described all the symptoms of this interesting case, and before I say anything concerning the treatment of such complaints, I shall give a brief history of the parents and relatives of the child. The father is about thirty-five years of age, of a slight figure, blue eyes, five feet seven inches in height, and apparently healthy. He says that he never bled from any part of his body from a slight cause; he also states, that he never heard of such an occurrence to have taken place in any branch of his family. The mother is a small active woman, of a sallow complexion and dark eyes, she has had four children, two boys and two girls. The boy, whose case I have related, is younger than his brother, who is healthy, and never has had any bleeding as yet. The girls are, apparently, free from any disease. The mother tells me that she had what is called a good time with each child, and had no unusual losses after delivery. A sister of her's lost two boys from hæmorrhage, one, about four months old, died of bleeding from the gums after they were lanced; the other bled to death from an incision into an ecchymosed tumour produced by a fall. The father of these two male children is reported to me as healthy, and has no knowledge of an hereditary disposition to bleed in any of his family. Before I was made acquainted with these important facts, I had no evidence by which I could prove the case to be one of hereditary hæmorrhage; but now I think that there can be no doubt but that this little sufferer's mother entailed upon him this melancholy disease. The history of the sister and death of her two boys, together with the improbability of each sister meeting with a husband afflicted with this rather rare complaint, fix its origin without doubt. I have met with

some cases of hæmorrhage from slight causes that could not be traced to an hereditary origin. I recollect two cases of young females bleeding profusely, and to an alarming extent after the extraction of a tooth; another case also of a female who bled frequently from the gums corresponding to the molar teeth. After repeated hæmorrhage the menstrual discharge became deficient in quantity, and at length ceased altogether, the bleeding from the gums came on periodically. How this case terminated I am ignorant, for I lost sight of it.

In the treatment of such complaints, our first object should be to arrest the progress of the bleeding as soon as possible; for it is a well known fact, that persons who have lost much blood do not recover their strength and colour for a long time. The change of colour is most remarkable in the face; it assumes a yellowish-white, resembled by some to an unripe lemon, and there is great pallor of parts naturally red. These appearances are chiefly caused by a deficiency in the red portions of the blood. Our next object in the treatment should be to endeavour to bring about such a change in the system, as will be most likely to resolve the blood to its healthy condition, and thus remove, or at least diminish, the frequency of relapses. To accomplish the first indication, the internal use of acids, digitalis, and oxyde of lead has been recommended; some recommend bleeding. I do not recollect ever seeing a case of hereditary hæmorrhage treated by blood-letting; but obstinate bleeding has taken place from the lips of the wound made with the lancet. The best topical remedies are astringent lotions, caustic, and pressure. As soon as the bleeding has been stopped, we should put the second indication into execution as soon as possible. This, I am sorry to say, we cannot always do, for as soon as the alarm produced by the flowing of the blood has subsided, we see, perhaps, no more of the patient until another attack. This is strongly verified in the present instance, the disease has been going on for three years, and yet it is nearly as bad as when I first saw it; because I have not had an opportunity

of treating the case for any length of time after the cessation of the bleeding. In such cases as have come under my care, I have found the digestive organs much out of order. In the case under consideration there has been always a great derangement of these organs. He had a strange desire to eat clay, lime, and his bowels were generally very irregular. Whenever I have had an opportunity, I have prescribed, with very good effect, the hydrargyrum cum creta in doses proportioned to the age, and, on the following morning, bitters combined with aperients. If a diarrhœa exist, a dose or two of such medicines generally puts an end to it, if not, we must give chalk mixture; catechu, opium, logwood, lime water, and new milk: when the diarrhœa is stopped constipation is apt to follow. If this is allowed to exist for any time, a relapse of the diarrhœa will take place, but by keeping the bowels in a soluble state this will be obviated. When we have succeeded in regulating the digestive organs, we may direct tonic medicines, such as quinine; iron in different forms is often found highly useful, but the country air does more, in my opinion, for hæmorrhagic constitutions than any medicine we can possibly prescribe. The effects of the country on this little patient's health was very remarkable. The first time he bled after returning from the country the blood coagulated, which never took place at any previous attack. This I attributed to the change brought about in the system by the country residence, though short. This is not the only case in which I have witnessed the beneficial effects of country air on hæmorrhagic constitutions induced by breathing a vitiated atmosphere. These facts suggest to me the propriety of cautioning parents and guardians in the humbler walk of life, (where such complaints are chiefly to be found,) against binding boys, in whom the disposition to bleed has early shewed itself, to such trades as would require them to sit in ill-ventilated rooms for several hours every day; tailors and shoemakers are so circumstanced in general. Out-door occupation, and employment in the country are most healthful, and give boys afflicted

with such a malady as my patient, the best chance of throwing off the disease, and arriving to manhood in health.

ART. XIV.—*Remarks on the Uses of the Globules in relation to Absorption, Secretion, and Morbid Deposition.* By THOMAS HODGSON WATTS, M. D.

THE close examination of milk by the microscope, suggested to us a new theory of secretion and absorption, which might accommodate several general rules for the composition of fluid and solid products of the living body in health or disease. Ingenious suppositions, it strikes us, used aright in the cultivation of a science of hard earned and slow experience, ought not to be discarded with indifference; for they are steadfast guides to inquiry, and lead at least to negative knowledge, if they do not more happily conduct us to the truth. This offspring of the creative mind we admire for the moment, but our fondness for it will last only as long as it may prove truthful and good, otherwise we would disown it forthwith. Let us now consider it awhile:

The globules of milk are extremely various in size, some having upwards of five, six, or seven times their smallest volume. They must be formed either to remain unaltered in their primitive volume, or to grow and develope themselves progressively. Their first appearance is in the lactiferous system of the mammary glands alone.

We may assume, that the requisite condition for their formation, is a supply there of a particular fluid, milk embryon, chosen from the blood in the capillaries by the vital affinities of those glands, and secreted into milk ducts.

That the separate affinities of the milk globules next come into play, forming them in the beginning of their smallest volume, but endowed with the individual ability to grow, within

a certain limit, larger, on a continued supply of the milk embryon.

When we consider the uses of globules, whether in the healthful or morbid conditions of the body, we find ourselves much at a loss to apprehend any of them in the way of demonstration. They must, nevertheless, serve for some useful purposes in the scene of actions of organic life; and were there no other reasons for such research, the detection of any causes for their formation, would satisfy our curious minds, always alert to inquire into the intention of what we see. There is, however, a promise of new light into the mysterious operations of organic life gleaming before us, in the discovery of the functions of the animal globules. We may hope in this manner to solve satisfactorily some of the existing obscurity in which the acts of physiological secretion and nutrition are wrapt, as well to clear up several of the peculiarities of pathological deposit; and we will see thereby how much nature can achieve by her elementary powers in the sole multiplication of the material sites of the creative faculty. It is thus, in our inquiries into causation, we perceive a series of ultimate forces which govern the phenomena around us, and these are various in their broad features, as in the character of the appearances they preside over.

We acknowledge a force which holds the matter of our globe together, and we call it familiarly gravitation.

There is a scale of forces that arrange its dead materials into well-defined forms, and we style this crystallization.

There is another set of forces which combines senseless matter by unalterable measures of proportion, and we style it chemical affinity, in as much as the chemist may guide its compositions at will.

There are other forces which compose dead matter in determined proportions in the animal economy, which the chemist cannot compound, and we name them vital affinities.

There is another great series of forces, which coins living things after ascertained forms other than those of crystalliza-

tion; constant to the individual and class, impossible for the chemist to imitate, and limited in duration; and we call this series, vital creative force.

It is this last order of forces that we witness building up forms in numberless varieties on every hand; from the mildew to the most transparent moss; from tender herb to trees; from monod forms to mollusca; thence to moving creatures and animalia; and from animalculæ to man. But it is more particularly such as we observe it, in those limited existences incapable of procreation, which are but made for a time, to be, to endure, to grow for the most part, and to perish. And here we classify the globules, whether such as are direct or indirect products of orgi-nization, and we call that, whereby they exist, globular creative force.

That this is a real force, and likewise in relation to outward things, which collects globular elements into a regular form, and of a normal size, we never doubt: that it acts only in the product of organization we are convinced, either directly as seen in the blood, visceral fluids, and secretions, and in healthy structures, and in the produce of disease; or indirectly, as detected in the solutions of vegetable and animal matter, made by artifice or accident.

The globular creative force can withdraw the elements over which it reigns, within limits beyond the sphere of chemical affinity and crystallization; and enduing them with a new existence, whose composition resists several physical influences, it places them in some measure above the milder attractions of gravity—as vital existences obey gravitation only in the massive whole. How minute soever may be the forms it moulds, that must still be a power which makes them; and by their manifold quantities, it thus becomes at length tangible to our senses through its remarkable effects. It is, indeed, the assumption of a vital fashion of being we are now discussing; but let us turn again to review the might of assumption of form in dead matter—to ad-

mire for an instant crystallization and ice burst a brazen vessel amid the applause of the philosophers of Leyden. But in the crystal, the whole power of composition is expended in its formation, whilst the assumption of a vital form is but the commencement of growth; and the forces of composition are again continued in equal or greater capacity. That virtue which is momentaneous, violent, and irresistable in the crystal; becomes gradual, mild, and endurable in vital existences.

Globular growth performs, in our opinion, an important part in the functions of the animal economy; so great, indeed, that we will take pains to render as clear an idea of the manner of action of this force, as we can well do. That growth is an extensive and a vast power is evident to every one observant of the colossal forms it builds; where forests nod defiance to the storms of ages, or when it gathers, apart from the soil they tread upon, the moving carcasses of the brawny ox and docile elephant. It is not less remarkable in the lily than in the sycamore, when they arise out of the earth, where their embryons had slumbered, the one will cleave the crevice of the rock asunder, as the other pushes gently sideward the crumb of clay. Although these are but examples of the resistance of growing bodies, still they are to some extent, a measure of the power of accumulating material inherent in growth. It is, however, particularly the accumulative faculty of vitality we wish to consider here, and we designate by the familiar term of growth, all those modifications of the forces of affinity, which nature employs to complete her coinage of progressive forms and develope vital existences. The mushroom comes and grows out of its embryon earth, and gathers rapidly the moisture and nutriments from the surrounding soil, whilst no one doubts the agents accomplishing such ends, to be forces that sway largely over neighbouring matter. The human ovum when voided into the womb, collects by the invisible affinities of growth whatever is needful out of the plastic exudation to form the embryon, and afterwards this feeds upon the maternal

blood, while waxing into fœtus, and from the beginning the forces of composition overcome the resistance of the uterine fibres, aided by the walls of the abdomen. But such are not perfect analogies of the growth of globules, so simple in structure as to increase more like the organ from its blood, or the enlarging crystalline mass outside a membrane containing its solution by aid of electro-galvanism. We own the difficulty of a good comparison betwixt the growth of the simplest forms of microscopic life, and the complex creations daily before our naked eye, in themselves ill understood; and we feel this the more from the different views we entertain of the uses of the globular fluids in the animal economy, as compared to those in general received, particularly in relation to secretion and absorption. We will hasten to their exposition for this reason.

There appears hitherto no good reduction of the phenomena of these functions to their ultimate causes to have been accomplished, so as to convey to the minds of men well grounded notions of them, that explain actually what each individual should comprehend of them in the same manner. We will endeavour on our part to supply this want of system in the detail of observations; but, in the first place, we will here review solely the processes of intestinal absorption by the lacteals, which is closely connected with the subject of growth. It has long been our conviction, that the manner of explanation of this process, given by physiologists, has been founded too extensively on bare physical principles; nor have they ever satisfied our mind of the exactness of their views. Without refusing, however, to acknowledge the just part, which the elementary powers hitherto attributed to absorption may have, we will proceed at once to unfold our personal convictions regarding this function: we will assume, therefore:

That the lymphatic system and vessels effect a primary process of human nutrition, in the preparation of a fluid fit to

mingle safely in the circulation, and undergo the change into blood:

That their vessels are endowed in consequence with vital affinities to accumulate the elements of such fluid:

That this accumulation of the elements of lymph goes on everywhere in the animal economy, either directly from the digested mass itself, or from the exhausted materials of nutrition in the change of substance, or else from the exuded matters of surfaces, cavities, and cells of tissues:

That such accumulation is, however, most extensive and remarkable in the intestines.

Here we have taken a broad survey of the primary sites of the nutritive process, where we detect it in effect performed within the actual structures of this body, and in close vascular apparatus. We own, nevertheless, a foregoing preparation of the material intended for lacteal absorption, in the digestion of food and its preparation into chyme; and we also remark therein the first influence of vitality on the senseless matter of the external world.

When the solution of foods has been accomplished in the stomach, numerous globules form in it, as may happen everywhere at one period or another wherever organic matters are held in the state of liquid; this phenomenon is well seen in the fermenting vegetable infusions. Such globules, however, as are observed in the product of digestion, constitute the bulk of the material destined to form the chyle, after their absorption into that portion of the lymphatic system commonly called the lacteals. Although we have drawn a near comparison between the formation of the globules in chyme, and those other infusories, yet we would not deny, nay, rather anticipate, some direct vitalizing influence beglowed into the mass of digesta, in which vivifies the pulp of the chyme for globular life, as the atmosphere elsewhere; but we would only rest the exactness of such an hypothesis on the insufficiency being found, of the general application of the same physical influences as obtain in the

stomach during digestion, to effect a similar change. It is more particularly to such a power we incline to attribute the rapid, almost momentaneous bound of inert matter into a new state, creeping with the forms of life, which we witness in chyme confined from the free access of air, whilst fermentation appears too slow a process to answer fully and simply these ends of animal nutrition. But we will not lay much stress on this argument, to demonstrate which, by unexceptionable proof, would be as hard as any other principles of a science of probabilities; and we will, therefore, waive the question in passing, to establish our views on the uses of the globules in chyme relative to the act of absorption. With this purpose in prospect, we will next assume:

That the globules in chyme are already highly animalized, and vivivied so as to respond to the vital affinities of the lacteals ramifying in the intestine:

That the affinities of the lacteals attract towards them the globules contained in the chyme, as by an accumulative force:

That these affinities of the lacteals, in attaching the globules in chyme to their fine walls, dissolve them, to compose thereby the embryon of chyle which they imbibe:

That the membranous imbibition of their walls is assisted by the creative force of the chyle globules acting within the lacteals:

That the growth of the chyle globules is also a force aiding imbibition, which solicits a supply of its embryon inwards:

That the globules of chyle besides hinder its transudation outwards, which must necessarily take place, were it not composed of more solid forms in liquid suspension:

That the first effort for the movement of chyle into the circulation is peripheral, and the needful sequence of the formation, growth, and accumulation of a globular fluid not easily subject to transude:

That the movements of the lacteals and surrounding parts,

which the globular constitution of the chyle can admit of without danger of its expression, is an important means of pressing it forward into the circulation :

That the void formed suddenly in the chest during inspiration, appealing as well to the fluids as air, is also a great cause of suction of the chyle onward :

That expiration aids likewise to propel on the fluids contained in valvular canals within its sphere of action : so also the chyle :

That capillary attraction may considerably assist its flow :

That the valves of the lacteals prevent its retrogression :

That the vacuum caused in the sanguiferous system by the action of the centre of circulation, and the composition of currents in the veins, are causes of motion for the chyle.

Acknowledging thus all the ordinary agents in absorption allowed in the schools, we insist particularly on the real importance of others, which observers have heretofore overlooked to the best of our belief. We have brought under consideration all the active aids in this important function, and taken care, in our classification of their several forces, to attach each one of them to form and locality. It is in this fashion we can safely represent as many ultimate causes in the act of chyliferous absorption as there are material sites of power, which promote it in a manner evident to our senses ; and we hope hereby not to have rendered our language somewhat precise alone, but also to have given nicely defined notions of the process we treat of, and a satisfactory analysis of the subject. Observers of the marvels of vital operations in all times remarked the grand features of absorption, but they never succeeded in giving a strict and complete localization of its means. It is long ago that globules were discovered in the chyme, and their flaky gathering was remarked for ages, yet no one has heretofore broached an opinion wearing the aspect of probability concerning their uses there, nor of the preference of the flakes for the intestinal wall. The opinions at all periods on these points were either too me-

chanical to be true, or too mystical for common understanding. The chyle globules were under the view of the microscopical observer, and contemplated a succession of years by physiologists with admiration ; but their immediate and mechanical uses were wholly lost sight of in the exclusive and misdirected inquiry into their lot, when once mingled in the blood and into the sources of their formation. Their origin is, in our opinion, an ultimate truth, which cannot be explained by the pigmy intelligence of man, and we do wisely in referring it to some force as to a cause, that classifies the phenomenon with others according to its analogies. But regarding the lot of the globules of chyle, after entering the circulation, we can ascertain nothing; and all we know of their remote uses is the fact, that the chyle is an intermediate condition of the nutriment of the body, and this we may as justly infer from our observation of its sources as of its conveyance into the grand reservoir of vital fluid. Then the true field of inquiry, regarding this or any other matter, must be its own locality ; to watch all the remarkable appearances it presents within our view, whereby we may trace their relations to each other, and themselves to their causes. This is precisely what we have sought to attain in our generalizations, and, as we hope, with some success. Observing the chyme team with globular existences, we were alive to the importance of the change, and perceived therein the separation of the true elementary ingredients of nutrition from the unprepared remnants of food and the refuse of excretion. We saw those corpuscules endowed with a mutual affinity for the walls of the lacteals, whereby they are enabled afterwards to attain them on every side from amongst the mingling mass. Seeing them disappear on this point, and detecting their elements again within the lacteals, we recognized accumulative decomposing forces in the fine membranous walls of these vessels, relative to the globules in chyme and a high capacity for inbibition. Remarking the new appearance of globules in the lacteals, we presumed forthwith on the operation of another force, creating chyle globules out of the embryonal

liquor quickly as it gained the interior by inbibition. When we saw a variety in their sizes, we concluded on their capability of growth, and inquiring into their further uses, we apprehended that they aid imbibition inwards, hinder transudation outwards, and fit the chyle for its propulsion into the circulation.

We have passed in review the value of the globules in the acts of absorption, whilst discussing the reality of the force of globular growth, because we conceived that this power, once allowed to a large body of complicated organization, would be the more easily conceded to others minute and simple. Those powers of growth, which operate so manifestly in all parts of the animal machine to build up a various whole, we wish to witness acknowledged for the miscroscopic bodies of growing globules. The growth of tissue in the animal comes nearest in resemblance to that of the globule; but this is a whole, and the former only part of an entity. However, vital affinities are at work in both instances, though in a modified form, and the simpler set of them that make the globule entire in its embyon fluid, possess, in due measure, a force over external matter as well as those others of animal parenchyma. Globular growth acts immediately on surrounding matter, thus representing the first step out of the sphere of crystallization into the field of vital affinity; and although it is not necessarily combined for its own purposes with a mechanical and physical apparatus, moved by the agency of vital actions, as we observe to be the case betwixt animal growth and the canals for absorption and circulation, yet even here we find it assisting powerfully, with its multiple force to aid the ultimate endeavours of the vital affinities in the development of the entire animal economy.

We cannot waive the subject of lacteal absorption without saying something to justify our assumptions on the general functions of the lymphatic system and vessels; but our immediate object being to direct the public mind to a right course of researches into the uses of the globules, we will be as concise as

possible. We will, therefore, adopt the plan of simple propositions, and leave their argument to those who have leisure enough for speculative inquiry, or desire to prove the exactness of our individual opinions. It will be sufficient satisfaction for us to learn, that our opinions on these matters stand upon the solid basis of a natural survey of vital action; and more particularly, if we succeed to guide others to a surer path of inquiry. It appears to us then:

That as the lacteals are a part of the lymphatic system, and absorb the elements of mixtion in chyme, to prepare them for advantageous mixtion in the blood; so also must the whole of the lymphatics contribute to a harmony of purpose, and fulfil elsewhere the same ends:

That this inference is rendered probable by the exact similarity of structure in every part of the lymphatics, whether lacteal or otherwise; and by the like quality of fluid they convey as a part of the absorbent system onwards to the general circulation:

That the lacteal chyle differs from the lymphatic, only in a larger proportion of globules in less liquor of suspension of a more decided colour:

That the sameness of the lymphatic and the lacteal chyle is more striking, as the former approaches the chyliferous duct:

That this similarity is most apparent during the interval of abstinence, when the chyle of the lacteals is less rich:

That the supply of alimentary nutriment through the lacteals would be totally insufficient, considering the enormous quantity of secretions and excretions, were there no other means of adding to it than the absorption of these vessels:

That the lymphatics, as a whole, take up as much of the globular elements of the secretion as is fit for conversion into a chyle analogous to that derived from the pulp of digestion:

That the vital affinities of the lymphatics and of the globular elements are mutual:

That the force of the former being constant, overcomes the latter; but only after a period of existence, or when the globular vitality begins to fail:

That considering nutrition as a process of change, and the great amount of corporeal substance, the loss of material could not be supplied by the absorption of ingesta, and secretions for conversion into chyle, if the exhausted matters of nutrition were not also formed anew:

That the lymphatics absorb every where the worn elements of organic substance, as soon as their place is occupied by new material separated from the circulating mass:

That they undergo the change into chyle, as in the case of all other ingredients of nutrition.

That there is a threefold antagonism between the capillaries with their blood, the formative force of tissues or organs, and the lymphatics, for the element of nutrition:

The formative force of tissues or organs withdrawing this element from the sphere of capillary affinities, and the lymphatic affinities inferior to that force, attracting the elements, which it acquires when a new supply of it, endowed with more vigorous vitality, responds to the formative force, and quits the capillaries:

That the lymphatics receive whatever is separated from the capillaries in the process of nutrition, beyond the requirements of the formative force:

That the lymphatic glands intercept the long and delicate lines of vessels, break the column of fluid, and relieve their fine walls; aiding thus the flow of chyle into the circulation:

That they bring the lymphatics frequently within the sphere of action of blood-vessels and nerves:

That the lymphatics can hereby relieve themselves by the absorption by blood-vessels of the matters contained in them not directly related to their chyle:

That they have in this way opportunities of opening directly

into veins, to void part of the chyle conveniently at a distance from the thoracic duct :

That persons affected with considerably congested, enlarged, or scrofulous glands, have not unfrequently voracious appetite :

That the lymphatic glands being much and generally diseased, there is not seldom lankness of figure, loss of flesh, thin blood, œdematous tissue, or one or more of them, even independent of sores or fever :

That medicinal agents put into contact with secretory surfaces, and the texture of organs, attain the circulation preferably by sanguiniferous absorption :

That all appearances seem to indicate the special intention of the lymphatics, to absorb and prepare the elements of nutrition :

That the general absorption of fluids, medicines, poisons, and indiscriminate matters, is more particularly favoured by the affinities of the circulating mass and the capillaries of blood-vessels :

That however the product of local disease not seldom attains the interior of the lymphatics :

That this happens especially when the nutrition of the locality is interested in the morbid change ; or when the morbid product is endowed with vitality by the affinities of the part : as in pus, carcinoma, chancre, &c.

The globule is the earliest form that life puts on in the animal economy, as we observe it in the primary albumen of the human ovum ; and it is so far a product of secretion, that we find it immediately in fluids secreted by organs, although the blood globules appear to form somewhere in the vast site of capillary circulation. It seems as if the circulating mass is stamped in the general capillaries with the dormant life of the blood globules, which awakens to assume its form in the busy capillaries of the lungs, where oxygen, its sentinel, removes the cloak of carbon that held it in the dark. Something analogous goes on

in the breathing leaves of plants, in respect to the globules of sap. This much, however, remains an ultimate truth, that the blood globules form in the circulating fluid, and this is henceforth the common reservoir of all organic secretion and accretion, whether nutritive or otherwise. From their sole formation here in a normal way, we may safely conclude that they owe their being to the affinities of life: their vital creative force, whether this be seated in the whole system of vessels, or only in a portion of the mass of structures where their finest walls ramify. If they are the result of organization, we must not suppose thereby that they are moulded by any process at all resembling mechanical or physical construction; they are called into existence by an almighty virtue incomprehensible to us, but manifest to man in the living system of organs. The finger of God makes them there, and they preserve a form obtained in this manner according to their capabilities. Thus is nature, or the creative abilities of our first cause widely distributed, conjoined everywhere with form, to maintain to-day as yesterday the equilibrium of creation and the wonders of life.

We think we hear some who will ask us, wherefore are there blood globules, and what have they to do with the processes of absorption or secretion, or any other else? To answer this demand, we will urge, that every globule is not always a direct agent in absorption or secretion, but becomes so merely by position and particular endowment, as when its assumption of form and growth solicit outward or inward of the vessels a supply of its own material. The globules of the blood, however, appear intended to preserve the circulating mass suitably within the vessels. Were it not for them we would have a mechanical exudation of this important fluid, in place of a well regulated special secretion on appropriate localities. Considered in this light, we see at once a satisfactory reason for their presence in the blood, and probably enough; there are others still more important, but wide beyond the reach of mechanical, or physical, or, perhaps, even chemical discussion. No one, however,

proved the existence of distinct pores or outlets in the fine capillaries for the direct exit of secretory fluid already compounded; but their walls, like other membranes, are most permeable to liquid. Here at once is a great need for the globules, which suffice by their countless numbers, and a proper amount of resistance, to solidify in some measure and contain the blood. But if we look at the powerful influence of the heart, inclining continually to express fluid from the circulation, we must admire infinitely the value of the globules in the circulating mass. Were it not for this admirable provision, our bodies could not withstand outward violence in any form; and even the caress of love would be soiled with the flow of blood, which as it is, the knife of the assassin can with difficulty attain. We see herein a most beautiful adoption of means convenient for a long series of intentions. For the purposes of the circulation of the blood, long and flexible tubes of interminable intricacy are required; and for those of secretion, nutrition and absorption, most delicate, fine, and pervious membrane shaped into canals; and the fluids in relation everywhere to them, have been constituted with remarkable wisdom to accommodate these peculiarities. Besides the permeability of the capillaries, and an antagonistical opposition to transudation on the part of the blood by means of its globules, it is necessary for this fluid to subject itself to the forces of secretion and nutrition, and we find this end obtained by the globular affinities resisting with success general imbibition and mechanical projection, whilst they give way to the vital affinities of organs and parts, whether for the nourishment of the body or for lubrifactive and emunctorial secretion.

Let us look next to the tablet of disease for some confirmation of our views concerning the uses of the blood globules in containing the vascular fluid, until demanded by the predominant forces of nutritive aggregation and various secretion. But, in passing, we may properly observe, that the globules seem to have an exactly proportioned attraction for the more liquid element they are suspended in, by which means the com-

position of the blood is kept more or less constant, nor readily alters its proportions except by disordered health. The real liquor of the blood remains thus securely in the vessels without danger of spontaneous or mechanical permeation. Besides there is another grand result of liquid attachment to globular solidity; the general, chemical, and physical attractions of blood for water, fluids, and innumerable matters in solution can readily come into activity, performing one of the first steps in common absorption. Here we make an important distinction between the absorption of the chyle, lymph, or pabulum performed by the lymphatics, and the indiscriminate drafting of indifferent and foreign materials into the economy, or such as need no vital preparation into the circulation, by the capillaries, of blood-vessels. We desire to establish as the only agents in this latter process:

The membranous imbibition of the capillaries; the attraction of the blood for all soluble matters of the external world; and the vacuum of the circulation, produced by the action of the heart, the movements of the chest, and the composition of currents, as well as other causes of veinous circulation.

Among the number of affections in which the proportion of the globules is inferior, we have chlorosis, anemia, and cachexias; and it is precisely in them that we find a remarkable bias to œdematous infiltration of the cellular network, particularly in depending parts, as well as of the massive organs and serous cavities. Frequently the limbs of the strongly cachectic swell with œdema so rapidly, as when accompanied by pain, to simulate an extensive phlebitis, although wholly devoid of any process of disorganization in their neighbourhood. We have not unfrequently seen the liver of pallid infants, which, sunk from phthisis, enlarged more than twofold the normal size, bloodless, pale yellow, and distended with serosity. It is a frequent occurrence for the practical physician to meet with ascites in young females ill of chlorosis, devoid entirely of inflammatory or other complication, and readily curable by the

preparations of iron and the routine of treatment for the general disease. We would not say that the essential malady is an alteration of the blood in such cases, but we acknowledge it, as one chief and nearest product, amongst others, of the morbid state which succeeds to depressing passions and afflicting emotions of the mind, some functional disorders and the various train of causation of the green sickness. We only desire to establish some relation of sequence betwixt the diminution of the globules and the ready exudation of serosity. But the alteration in the proportion of the globules, in most cases alluded to, is not remarkable enough to make us infer that much of the circulating mass ought necessarily to exude; on the contrary, there are two compensations, which modify the result and render the loss relatively less important. The one of them is the proportionable diminution of the volume of the pulse, and, of consequence, of the calibre of the capillaries, rendering their texture more compact. The other is the agreeable debility of cardiac action in comparison to the impulses of healthful energy, notwithstanding occasional palpitation, which is convulsive and less effortful. Thus we have an actual loss of quantity in the circulation, less impulsion from behind, and, consequent on both, greater closeness of the capillary; all opposing the results of thin blood.

There is, however, one most important objection to our opinions on the uses of the blood globules; this is, accordingly, that blood passes through the vessels in mass during the menstrual flux, and hæmorrhage, and this even if there is augmentation of the globules with default of fibrine. Were there no other vital phenomena in play in those cases, and were the passage of blood here a mere exudation from normal capillaries, it would be unanswerable, and our theory would no longer be a faithful generalization; but this is not so; the matter stands otherwise. We have in fact new nervous acts in the part, overflowing it with blood after their own fashion; following the nervous changes, we perceive enormous distention of vessels, loss

of tension to a remarkable extent in the capillaries, and considerable increase of the impulse of the centre of circulation. We remark in this retrospect quite another condition of the part in hæmorrhage than that of ordinary health, when the globular constitution of the blood suffices to maintain it properly in the vessels. The nervous phenomenon in such cases appears somewhat analogous to that of blushing or the brunt of anger, which exhaust at once the contractility of such most delicate capillaries, as obtain in the part of its concentration, whilst it is only enough to disturb, disorder, and impel the massy heart, arousing it into more vigorous action. The stroke that caresses the eagle will crush the ephemera; the pleasures that invigorate the man enervate the youth; and the mental and the organic excitements of the ruder fibres of the body, are paralyzing appeals to those more finely endowed. If to these conditions of the bleeding locality there were superadded, but which happily does not appear, except in menstruation, special forces of sanguineous secretion, they would suffice, in a short space, to drain the circulation, and to swamp every parenchyma which hæmorrhage befals. If they exist even in the site of the menstrual flux at all, still a periodical character and a limited form are good security against their otherwise evil agency. Then again there is this distinction between the vital phenomena of inflammation and those of hæmorrhage, the former coagulate the blood in the part, whilst the latter much rather dissolve it; we have commotion with flux of circulatory fluid on the one hand, and its coagulation in the capillary, with pain, or heat, or warmth on the other. These are important considerations, as they seem to point to the flux of blood, as affected in a great measure by the vito-physical conditions of the system, and, perhaps, wholly independent of the affinities of life. The globules were designed to answer the needs of the economy in the extreme aberrations of health; and no wonder if in disease, and under circumstances so different, they cease for a moment to answer their principal use in this corporeal being, to contain the material of the reservoir of life.

The blood globules being in the same individual of an almost uniform size, accords exactly with our views of their uses, as here is no decided need of the diversion of globular growth into the circulation over and above the lymphatic and common absorption. Besides, the force of growth might prove an embarrassment in this place, for the blood globules would seek their elements on the tissues around them, and be still farther in antagonism with the affinities of nutrition and secretion. This would be a waste and needless contention of power; but look how beautiful is the equilibrium kept wherever blood exhilarates: dark wisdom of him which disrobed chaos.

As in the circulation the essential requirements for the existence of the blood globules obtain, so likewise the fluids secreted during health on the surface of membranes, and of the canals of glands, possess the requisites for the existence of the globules of mucus, milk, and soforth; and also in disease the blood of the inflamed part can furnish the globules of pus, and the secretions of cachectic persons hold the elements of tubercle, cancer, and various morbid matters. It is important to maintain, that the first appearance of the globules of the secretions is consequent on the separation of their own embryon in the fluid form from the circulation, and that they form in it immediately after, or with an interval on the surface where it is voided. We neither find the globules of mucus, milk, nor any others of glandular formation in the blood in health. This is an important fact to consider, for many have been led to found arguments on the presence or absence of the secretions *in forma* in the blood, prior to their separation from it, upon the detection therein of their characteristic globules. However, to reason in such a manner is not logical; it is founding the discussion on the fallacy of begging the question; and the globules, after all we can say, are but a part of mucus or other secreted fluids. The plainer idea we entertain of their formation, when we refer it once to the local affi-

nities of life, removes us also from the sad errors of more mechanical minds among the observers of the phenomena of health and disease. It does away quite with the need of imagining pores to suck up and pour out the secretions or the ingredients of absorption, and many more chimerical actions attributed wrongly to mere forms of things born in fancy.

According to the view we take of the process of secretion, the prior existence of the globules resulting from it would not only be uncalled for in the circulating mass, but also an incumbrance, whilst their utility in the secreted fluid, out of the circulation, must necessarily be great. The globules, in our opinion, are formed of an inferior size, enlarge subsequently, and grow to such dimensions as are allotted to them. As they increase at the expense of a new supply of material, they solicit from the vessels the liquor of secretion for which they bear a certain amount of attraction. Thus they constitute an important part of the forces of secretion, wherein we see nature augment her powers in a homely way, when she endows the very fluid desired for separation with ability to assist in common with the organ of primary affinities to effect her purpose. What means so simple, ready, and effective could be devised for enhancing the force of the affinities of the organ of secretion, as the calling into aid the elementary powers of formation and growth, which accumulate the materials to build up their simpler forms by an analogous set of aggregating attractions? Growth is one of the most constant of the faculties of existing matter, either as seen in the vegetable or animal, or in all vital forms; and the employment of it to perfect organic function, is a beautiful adaptation of means, when constancy of action is almost a need, and where the diversions from the regular routine of vital duty in the animal frame might often produce disorders, which, how transient soever, must necessarily be of ill effect. It is a persistent, calm, and kind demand on further secretion. But this is not the only use of the globules in secreted matters, for they serve, in

our conviction, another purpose of principal importance, in hindering the continued imbibition of the secretions into the circulation, until these are prepared by the decompositions and recompositions of the process of absorption for safe admixture with the blood. We know all membranes, in any degree pervious, imbibe moist matters; and the extent of surface bathed in secretions in the animal is so considerable, that they would soon overwhelm the circulating mass, had not this been wisely provided against by globular resistance. Thus imbibition is provided against from this quarter; but when we recollect that a chief cause of indiscriminate absorption is the affinities of the blood itself for fluid and numerous matters, we will recognize still more the value of the durable globules in the secretions. We may, therefore, establish the subsequent principles regarding the uses of the globules in the secretions:

That they are, by the assumption of form and growth, truly adjectives to secretion:

That they oppose the sole action of membranous imbibition:

That they withstand the sole force of indiscriminate absorption:

That they delay thus the secretions on the surface to be moistened, until they respond to the vital forces of the lymphatics, which compose them afresh into a chyle for the blood:

That they hinder the imbibition and absorption of some of the excretory secretions until evacuated:

That they preserve the vitality of much of the products of organization.

We have now completed the enumeration of the functions of the globules in the secretions, and refer their origin in them to the globular creative force, as to an ultimate fact, which comes into operation only after the separation of their embryon fluid from the capillaries of the surface where they form. Although considerable agents of secretion, they are

far from being its sole cause; there are others of primary importance and still more requisite, and we may reckon them as a whole series as follows:

The vital affinities of the capillaries, modified by locality, proper to decompose blood with its globules, and to accumulate the chosen elements of the embryon of secretion:

The fine and permeable membranes of the vessels, endowed with a high capacity for imbibition, whereby to give ready passage to the embryon liquor already drawn together:

Vascular resistance, and the impulse of the circulation from behind, favouring imbibition by the expression of the embryon liquor accumulated on the walls of the capillaries, and the solicitation outwards of the globules of secreted fluids: such are the chief and great forces of secretion, but the elementary organic and vital affinities form the hinge of the whole process.

The milk globules are a striking example of the great use that the process of secretion derives from globular growth; and again, those of mucus shew how nicely its application is modified in aid of the particular needs of the case. The principal distinction, in either instance, rests on the requirement of a speedy, plenteous, and durable separation of nutritive liquor on the one part, and of a gradual, continuous, and slight distillation of a lubricating fluid on the other; and to accomplish these aims, the adaptation of the faculty in question is properly proportioned. Enlarged four hundredfold by the microscope, the smallest globules of milk appear nearly the size of the seeds of the ordinary white poppy, and vary from this volume to that of a convolvulus seed, or a couple of cardamon grains, or even larger. They have a perfectly spherical form, are clear, and almost transparent, and of a lustrous silver hue. They are apparently saccular, being covered by a smooth skin; and whatever be their size, in general characters they are very similar, which are so well marked as not to be easily mistaken. This extreme uniformity of appearance, except in point of volume, argues strongly

in favour of our opinion regarding their gradual growth; for a standard of dimensions appears to us every where an object of endeavour with nature, to maintain the just equilibrium in each particular order of forms. We can only reason from analogy when the faculty of observation no longer avails us; and we will here venture to assume, that we are not wrong in believing, that the common rules of creation have not been abandoned in respect to the milk globules, as to their apparent and probable proportions from the instant of formation onwards. From such considerations it is clear, if we allow the milk globules the ability to grow and enlarge at the expense of their embryon, they must make a considerable demand on the blood, and secretory affinities of the capillaries of the breasts, helping thus to promote the quick and abundant supply of milk in them. The value of such a force of derivation beyond the sphere of direct organic action ought, of course, to be very sensible, where the *conatus naturæ*, in lactation, is a violent movement enough to disturb the weal of the economy, were it left to persevere as in the early period of lying-in. Aided by the growth of the globules, this function goes on at length calmly; and the primary organic action, peaceful but never idle, is only more excited by a transient affection of the mother, the suction of the child, and some more casual conditions. But another use of much consequence is observable in the wide sphere of growth peculiar to the milk globules; this is their consequent durability, and the persistence of their affinities, which will enable them to resist the various forces of absorption a sufficient time to allow of the evacuation of the milk, just as the resiliency of their solid form opposes its imbibition. Were it not for the adoption of this most convenient provision, either the intention of a secretion for purposes external to the individual would be defeated to a great degree, or else some new contrivance of the organ rendered necessary. The breasts are not constructed quite like the kidneys in their hydraulic arrangement; the milk, when formed, is exposed to a large extent of surface where circulation is active;

and it is not, like the urine, so immediately conveyed into a reservoir of a fibrous character, lined with a mucous membrane thickly coated with tenacious matter, to impede on every side its absorption as much as needful. Also when the urine begins to penetrate to the vital surface of its reservoir, the very idea of imbibition causes such inconvenience as to insure a complete evacuation. Besides the elements of milk would cause much disturbance in regaining the circulation; and the globules being in a measure vital, may make them fitter for food.

The healthful mucous globules are neither so numerous nor variable in size as those of milk, and some more periodical secretions. Notwithstanding they are smaller or larger in their relative proportions, we incline to believe that the objects of the Creator are in a measure attained, in regard to the mucous secretion on the surfaces free from disease, irritation, disorder or excitement, by the mere assumption of globular form, in addition to the primary forces of its manipulation. Under these circumstances, the globules are very uniform in mucus on the same site, having a spherical form, a greyish, almost transparent colour, a clean edge, with scarce perceptible covering, a composition most minutely granular, sometimes an internal cyst of finer structure, and no constant and decided black points. But when there is only a slight disorder of the mucous membrane, as well as in acute disease, these bodies undergo various and important modifications; and we probably attribute the varieties they present in consequence to similar specific conditions of the vitality, as produce the changeful appearances they wear even in health on different localities. In tracing the labyrinth of causation, amidst the innumerable acts of organic life, we can only pursue the succession of events step by step, until we attain the goal of human intelligence; although we may exclaim after all as Göethe, "Ich sehe wohl, dass Ich nichts wissen kann," in what affects the attributes of power, yet we still accomplish much by a successful pursuit of what the race of man is intended to attain.

It is but obedience to an inborn monitor, when we yield to the allurements of inquiry, whispered to us in the cradle, on the maternal lap, and during the sports of youth, while manhood plods in cares, and even in the hoar of years, by our destiny of experience. We will therefore endeavour to approach the facts bearing upon the modifications of mucous globules, in a manner which will render their variations from the normal standard appear less a cause of wonder than of admiration: to satisfy this intention we will unfold the following propositions in point:

The normal mucous globules are perfectly characteristic; tolerably equal in size, and not very variable in volume.

They are of a mixed character in the transparent, gelatinous sputa of the morning cough of habitual catarrh; some being as the normal, others smaller, others larger, two, three, or fourfold, and more; some broken in one or more parts; and mingled among them are innumerable corpuscules of globules, small as white poppy seeds, or slightly larger.

They are less distinct, and of a mixed aspect, in purulent secretion from the mucous membranes; not only are there fewer of the normal globules, but there is also a number in which the pus and mucus seem to mingle.

They are also mixed in the tubercular process, and in great part much modified in appearance, approaching by gradation to a specific character. And most probably we will one day find them modified in the carcinoma of the lung, and parts lined with mucous membrane; as well as in every other special act of disease.

The normal mucous globules, presenting to our view an observable regularity of character, accords well with the principles which we have sought to establish concerning their uses. The mucous surfaces, in health, as long as all causes of derangement are wanting, require only a fair lubrication; and the smaller range of globular growth is, in this case, a harmonizing appearance. It is a tranquil and persisting secretion

which is required, and the assumption of globular form seconds faithfully the other powers of this act; whilst the shorter range of the vital existence of these bodies submits them more readily to the influences of the lymphatic absorption. Thus the equilibrium is rightly maintained by their aiding secretion, opposing mere membranous imbibition, and their readiness for conversion into the lymphatic chyle or pabulum for the blood. Considering again the wide range of functional activity of the mucous membranes, prepared with such infinity of blood-vessels, nerves, and lymphatics, to answer the requirements of busier moments, we must admire this constant harmony of vital action. When the primary organic affinities of secretion are operating peacefully, they compose an embryon for globules, whose shorter range of growth resists but little specific absorption; when, on the contrary, they awaken to more serious action, whether by foreign, or the regular excitement of function, they compound the slumbering liquor of globular life, with a capacity for the greater durability of these interesting bodies. The mucous globule appears thenceforth earlier, and continues longer; in its creative force its life seems more energetic, but pays less regard to proportion; and we find it sometimes smaller, though most often more bulky than in the other circumstances.

The mucous globules of habitual catarrh are good examples of the great modifications of size, as also in some measure of aspect, which the productions of secreting organs are subject to. If we observe them in the muco-purulent sputa during the time of a severer cold, their characters mingle much with those of pus, yet we may detect pure specimens of the one or other kind among the mass. Here also there is less uniformity of proportion; the clearly mucous are often considerably above the normal volume, and in like measure those of pus; for the two seem to blend at a certain point. Perhaps this may not be the case, strictly speaking, but it is probably an obscure hermaphroditism. We should always keep in mind this composition

of vital forces, and avoid following the example of some "faisseurs des embarras," which desire to mystify the public regarding the difficulties of microscopical researches, unless they stumble themselves in reality against the leviathan that others shun. Few men, independent of theory or received notions, will stop for a moment to recognize a mixed process productive of muco-purulent secretion in catarrh, agreeing with the composite nature of the expectoration, and wherefore should we not admit with the same facility the influence of this mixtion even on the microscopic forms of the secretion. There is no judicious reason why we ought not; on the contrary, common sense tells us such is the case. The error we are all too apt to fall into in such researches, is the allowance of too limited forms to disease, whilst we seek to bestow an over simple entity on each. To avoid this, we will do well, in our intercourse with morbid processes, whenever we speak of mucus, pus, tubercle, or such like, to remember fully the modified gradations of all of them. The organic site of vital affinities of mucus may come at the same time within the sphere of pus or be supplanted wholly by them; in the one case we have a mixed globule, and mingling of globules, whilst in the other pus is more or less pure.

When we examined the gelatiniform expectoration of habitual catarrh, which passes so readily into tubercle, we found mucous globules of an enormous volume in comparison with the ordinary. They preserve their grey almost transparent granular appearance; but the colour is much deeper and less diaphanous, and the granules larger, whilst innumerable quantities of them swim about or gather together on every side. Here, according to our view, is another striking example of harmony, even in the irregularities of vital actions. The mucus is thrown out into the air cells and bronchi in excess; the function of the part is in a state of over plenitude of action, and the resulting production of the exaggerated condition of the composing forces of

secretion possesses a wide range of growth. We conceive the more durable globules oppose imbibition long enough, either for their absorption and preparation by the lymphatic vessels for mixture in the blood, else until they are sent forth from the lungs by the efforts of expectoration. Considering the length of time that must occasionally be required for their reception anew into the circulation, owing to their redundance, the great sphere of growth they enjoy must appear to every one of important use. The system is freed thus from the disturbance it might suffer, were mucus not globular, and thereby subject to imbibition, as happens too often in diseased secretion.

This view of the matter is strengthened by the rarity of the globules in the tears and salivary mucus. These are intended for special purposes, which the more solid character would not suit; whilst the little extent of the former, and its careful evacuation by a hydraulic apparatus, makes it in nowise a serious deviation from the rule of healthful provision we have pointed out. The saliva again is for the most part only sufficient to moisten the passages exposed to the air, or else a periodical secretion for mixtion with food; and the expenditure of a limited tumult of secretory forces could well be admitted for extraordinary purposes, which might be inconsistent on the whole.

We cannot also insist too much on the absurdity of searching for difficulties in the recognition of the mucous globules, even in wailing out of the mass, such as are broken, wasted, or otherwise altered. Every one must see at once how unphilosophical this manner of inquiry is; these are but the poor remains of original forms, now subject to exterior influences, and which have already lost a principal part of their entity of characters. Could any man recognize the features of his mangled friend, whom the sea brine had long bleached, and the hungry fish torn piecemeal with the gnawing tooth? It is very similar with the altered globules, which are finishing their existence, and undergoing the mucous digestion into a sort of chyme globules, suitable for absorption, by the lymphatics, in the shape of chyle

or pabulum for the blood. Under such circumstances, they waste in substance, diminish in volume, and grow more like the globules of pus by the unevenness of the worn substance. They decompose themselves into numerous minute corpuscules of globules, which are perhaps liable to be taken up by absorption, in the manner we have already exposed during normal function. But when the secretion of mucus is in excess, the evidence of mucous digestion becomes more clear; and we can see the largest globules more distinctly granular, as they wax until they are broken, or fall into decomposition by a gradation of their vitality towards an end, and the growing superiority in the forces external to them. It is in these cases that the corpuscules of globules become innumerable, and crowd fully the more liquid portion of the secreted matters, resisting all forces of attraction of the neighbouring tissue, until they are received by their proper channels.

We will next tax our views regarding the use of the globules, in their suitability to explain, by a set of generalizations, some remarkable features of morbid secretion, deposition, and change. Any satisfactory observations in relation to the habits and effects of these bodies in the state of health, are only valuable where they spare the inquiring minds of men from wrong pursuits, so injurious to human progress. Likewise the actual value of truthful classifications of their phenomena when produced by disease, can only be, we will venture to say, negative, in so far as they correct obscure or false notions afloat in respect to the process of the pathological state. But were this much even accomplished, it would be a great victory in pathology, and leave the medical inquirer more capable, and in perfect freedom for clinical observation, unharrassed by foreign pursuits that divert the mind from the discovery and cure of disease. It is true, notwithstanding, we may probably derive from such researches fuller views of the morbid condition, but this much does not promise great things in the cure; for medicine is in so strict a sense a science of experience, that a careful regard at

routine, and the institution of novel trials of treatment, appear to be the best masters to educate the physician. This conviction being impressed on our mind, in turning some attention to track the long train of morbid phenomena into the recess of microscopic form, we consult the weal of others engaged in such inquiries, rather than any personal good we can hope to obtain thereby. Practical men will duly appreciate the devotion of some care to follow out those inspirations, which have occurred to us amid the busy moments of medical observation; we owe this much to the debt of ages.

Previous to having availed ourselves of the microscope to examine particularly the productions of disease, we had entertained a strong suspicion of vito-chemical affinity having much to do with the progressive deposition of morbid matter; but we could not acquire any sensible form, where to attach our generalizations of their most remarkable characters. Now, however, that we have ability to look into the new world of previously invisible bodies, we detect minute existences of vital coinage;—true corporeal forms of some maladies; and it is to such we may safely attribute certain peculiarities of pathological depositions. Notwithstanding the essential disease is not the mere morbid product, it acts still a very considerable roll in the economy when once formed, and various properties of it admit of ready and interesting reductions to rule. We will, therefore, endeavour to arrange the several facts relating to morbid productions in a manner calculated to make them more familiar to common understanding. We will strive to place them in respective categories, according to the analogies they bear to the elementary matters of normal functions; and in this way we hope to expose a clear string of notions concerning their ultimate nature.

Although there is a near analogy manifest among all productions of disease, as to the manner of their formation and the elements of their composition, yet as modified by a vital organization they differ essentially in their reactions on chemical

tests, as well as in physical appearance. The mass of fluid circulating in the blood vessels is the chaos of the whole of them, whilst the vital affinities attached to localities of organs or tissues assimilate their embryon in quality of a liquor, in which they form a tangible existence for a time. Tubercle, carcinoma, scirrhus, cancer, colloid tumour, &c., form equally by secretion, but particularly in the plastic, and the nutritive, in organized lymph of inflammation everywhere, in the coagulated blood itself, and in phlogistic coagula, just as pus may follow in every part in sequence of inflammation and the suppurative process. We may observe, however, that pus prefers for its abodes the cicatrizing sore, the late inflamed substance of the solid parts, the coagula of inflamed vessels, and the surfaces of membranes already suffering from phlogosis, or some warm vital disorder. Tubercle, on the other hand, chiefly prefers the mucous surfaces during secretory excitation, whilst it hesitates in no degree to combine with the plastic and inflammatory processes in the substance of parts as well as on membranes.

(*To be continued.*)

BIBLIOGRAPHIC NOTICES.

Researches on Operative Midwifery, &c. &c. With plates. By Fleetwood Churchill, M.D. &c. Martin Keene and Son. pp. 356.

We have again to call the attention of our readers to the "Researches" of Dr. Churchill; hitherto we have observed him applying himself with unexampled industry to the diseases of women, and bringing the accumulated experience of the several authorities on that subject, both British and foreign, in an easy and tangible form before the reader, thus enabling him with facility to follow up the investigation of any particular disease, and by accurate and numerous references, abbreviating considerably the toil of searching through the dusty tomes of the medical library for facts and opinions that would have rested in dignified oblivion, but for the busy spirit that dragged them into light, and presented them to the notice of the reader.

We have now before us the result of a similar train of inquiry upon another and not less important subject, one which above all others has been subjected to the collision of opinions, and on some points of which it is almost amusing to witness the contrariety of doctrines and practices which obtains amongst eminent authorities, with apparently in all the same success. Operative midwifery has been the "vexata quæstio" of the medical schools, the "pons asinorum" of the medical student; and whoever undertakes to unravel the difficulties with which it is enveloped, to reconcile the differences of writers, and to draw legitimate conclusions from a careful analysis of facts, volunteers a task of no ordinary difficulty, and one which requires the utmost caution and discrimination to lead to successful issue. Dr. Churchill has in this respect adopted the fairest and at the same time the most prudent course. He gives a faithful history of each operation; quotes very largely the opinions which have from time to time governed the practice of the most eminent

men of the period and places before us, the statistical results, so far as they can be obtained, of the practice of all; thus giving the reader sufficient data to form his own conclusions, or to accept those which Dr. C. offers him, who in doing so "wishes it to be remembered that he is not writing his own experience, but that of others."

In this view, therefore, Dr. C. gives us very little opportunity for criticism, while he deservedly secures our fullest meed of approbation for the immense labour he has bestowed in collecting, reviewing, and arranging the scattered, neglected, and mouldering records of the past, and presenting so faithful and extensive a view of our present knowledge of operative midwifery.

The first essay is on the induction of premature labour, the history of which is short because the practice is recent, being little more than the details of a theological controversy upon the morality of using such means to preserve a life, which there is a moral certainty that if neglected must be sacrificed.

The propriety of the operation has been long recognized, by British practitioners, but is still objected to by French authors because

1st. It is immoral!

2nd. It is almost impossible to determine the exact relation between the head and the pelvis.

3rd. The measures necessary for exciting labour are highly dangerous.

4th. The uncertainty of all women as to the period of their pregnancy.

5th. The difficulty of the dilatation of the os uteri at the seventh month.

6th. The danger of subsequent disease.

These objections Dr. C. meets by facts, showing that the lives of both mother and child have been, in many instances, preserved, which would otherwise, one or both, have been lost; which facts afford a powerful support to the arguments he has quoted in favour of the operation. Dr. C. lays down a principle in discussing this question, which should ever be remembered, that "it is peculiar to midwifery operations that they form ascending series, increasing in gravity from the simplest to the most severe, no two being equal, and therefore in considering the suitability or practicability of any one, we do so with the knowledge that if the one we prefer do not succeed we must have recourse to another more severe and more dangerous." Hence the utility of the operation under discussion can only be judged of by a com-

parison between it and embryotomy, a mode of putting the question which appears to us conclusive on the point. Dr. C. replies to the objections already stated, and points out the cases where it is applicable.

1st. The induction of premature labour is not in itself immoral, and so far from being unsafe or destitute of utility, but few of the mothers are lost, and more than half the children are saved, whilst, in addition, both mother and child are spared the certainty of severe and dangerous operations.

2nd. That if the object be to save the life of the child, the cases in which it is applicable are those in which such a narrowing of the pelvis exists as will prohibit the passage of a full grown fœtus, but not that of a younger but still "viable" one.

3rd. That with this view the attempt will be useless, if the sacro-pubic diameter be less than two and a half inches, and superfluous, if that diameter be more than three and a quarter inches.

4th. That the operation should not be attempted before the completion of the seventh month, as that is about the period the child becomes "viable;" but that it is well to allow an additional fortnight to rectify any error in the calculation of the period of pregnacy.

5th. That when this operation is had recourse to and the dimensions of the pelvis are such as to promise success, we ought to defer the attempt as near to that period fixed by nature for the full evolution of the fœtus as circustances will admit, that thereby the child may acquire every possible advantage to insure a healthy state of existence after birth. (Barlow.)

These, with seven other useful rules, are laid down to direct us to the circumstances under which we may operate.

Of the several means of bringing on uterine action, viz., abdominal friction, separating the membranes, rupturing them, dilating the os tincæ by means of sponge, (the practice of MM. Brünninghausen and Klügè,) and ergot of rye, Dr. C. seems inclined to prefer the latter, as the integrity of the membranes is preserved, but, at the same time, considers the fact, that the proportion of children lost is greater than by the other means, a serious objection to its use.

The next essay is on version, or turning, in the history of which we can go back to Hippocrates.

"Celsus advises us to seize the feet when the head is not within our reach, but this is only to be done when the child is dead.

Ætius and Paulus Æginetus are the first ancient writers who recommend this manœuvre to be attempted with a living child. Rhodion, Franco, and Ambrose Parè mention the operation as a usual one, but without detail. Guillemeau, however, who was a pupil of Ambrose Parè, and who may have been indebted to him for his knowledge on this point, enters into minute details, and displays perfect familiarity with it."

Dr. C. thus traces the annals down to the present time, shewing that, in England, the earliest attempt was to replace the head, as is quaintly stated in an old work of Andreas Perforatus, the founder of the medical fraternity of Merry Andrews. The author says;

"Peradventure the child is turned in the mother's body, and that the head doth not come first, then there is great peril. If the head of the childe does not come forth first, the midwife then must turne the childe, that the head may come forth first, and let the midwife anoint her hand with y^{e} oyle olive."

This was soon after given up for Guillemeau's more eligible mode of turning by the feet.

Dr. C. has given very valuable statistical tables of the results of this operation, from which it appears that there are,

In English practice,	in 39,539	cases,	147	cases of version,		or about 1 in	269
In French	do.	in 37,479	do.	400	do.	do.	or about 1 in	93½
In German	do.	in 21,516	do.	337	do.	do.	or about 1 in	111½

Dr. C. complains with much truth of the deficiency of detail to be found in the several hospital reports, some of which omit altogether any allusion to the result to the mother, others to the child, and in this respect bears a merited testimony to the superior accuracy and fidelity of Dr. Collins's valuable Report. In this we fully agree. We know of nothing more important to an accurate conclusion on points of practice than that the details be given faithfully, and the results, whether fatal or otherwise, where the practice has been employed, honestly stated; and yet when books are read, and the tables examined, we find positive assertion in the one, supported by unparalleled success in the other, which leads us to the natural inference that the whole truth is not told, and, therefore, what may be true is viewed with suspicion. Dr. Collins's Report stands as an exception, not only for its fulness, but that the cases detailed are those in which his practice has not been successful, and, therefore, where every thing is stated, we have the more confidence in the conclusions founded upon his facts. What can be a

greater contrast than the history of this operation in the French Reports, in which the results to the mother are altogether omitted! Though they have performed it in a considerably greater proportion, and present us with a very favourable table of children preserved by it, they are silent on the equally important element of the calculation—the safety of the mother. Did the latter always escape, or did the greater mortality prevent its announcement? We are thus left in an uncertainty which makes these tables nearly useless.

Dr. C. has, therefore, found it difficult to make any perfectly satisfactory table: but by selecting and arranging those records most to be depended upon, he finds the proportionate mortality to the mother about one in fifteen, in which, however, the *cause* of the operation must be allowed to have a certain influence, as well as the operation itself. That of the child was "rather less than one in three," a similar allowance being made as in the former instance.

Dr. C. enumerates the different modes of operating, either by the feet (podalic version) or by replacing the head (cephalic version.) The latter is a revival of the old practice, which we must confess we would hesitate to recommend as a general rule, as we fear it would too frequently end in fruitless, and, therefore, mischievous meddling; but we are free to admit that there are certain cases where it may be employed most effectually. We have known more than one instance in which a (so-called) arm presentation was very readily rectified, the head having been prevented from entering the cavity of the pelvis by the arm, which descended along with it. The arm was pushed back in the interval of a pain, and so maintained, until the next uterine effort brought down the head, after which the child was readily delivered.

Shall we enter upon the discussion to which the next essay would lead us, and compare the merits of the vectis and forceps, and each forceps with its fellow? No; we shall leave this to our reader, assuring him that he will find an abundant mass of materials skilfully arranged to aid him in his researches. The variety of instruments (plates of which are appended to the volume) for an apparently simple purpose, will surprise him; and if he should happen to refer to the original inventor of each instrument, the successive improvers, and the manner in which each alteration is advocated, he might be inclined to suppose, that if the safety of the patient depended upon an agreement between the parties, as to the means to be employed, he would be much in the situation of the town, the different means of fortifying

which formed such an interesting history when our infant mind was first introduced to a controversy on the merits of leather. We have the less hesitation in passing by this subjeet, feeling assured that the practitioner *whose hands* have been educated, may employ almost any instrument with safety; but where the head alone has been instructed, we fear that he would blunder with the best. At the same time, we must be permitted to enter our protest against the long French forceps, which might not inaptly be called the "monster forceps;" fortunately it has received no encouragement in these countries, and we shall not contribute to its introduction.

Dr. C.'s rules for the use of either instrument are clear and intelligible, and none of more importance than that of attending to symptoms premonitory of mischief, rather than being guided by the duration of labour, when we consider the earnestness with which it has been urged to cut short, by our interference, a labour that has passed a given time, the temptation that allures us to abridge our patient's sufferings and our own anxiety, by a very simple process, and the mischief that has followed such precipitancy, we cannot too highly appreciate so valuable a principle.

Our limits will not permit us to go in detail through the remaining essays, but we cannot pass by that on the Cæsarian section, in which Dr. C. has collected together from all quarters no less than 409 such operations, which he has enumerated in a series of tables, accordingly as they were British or foreign, successful or otherwise.

"These tables yield the following results:

"1. Amongst British practitioners, in 40 cases, 11 mothers recovered and 29 died, or nearly three-fourths.

"2. Out of 37 cases where the result to the child is mentioned, 22 were saved and 15 were lost, or 1 in $2\frac{1}{2}$.

"3. Among Continental practitioners, out of 369 cases, 217 mothers recovered and 152 died, or about 1 in $2\frac{1}{3}$.

"4. Out of 187 cases where the result to the child is given, 138 were saved and 49 were lost, or nearly 1 in 4.

"5. Taking the entire number, which amounts to 409, we find that 228 mothers were saved and 181 lost, or about 1 in $2\frac{1}{4}$; and that out of 224 children, 160 were saved and 64 lost, or about 1 in $3\frac{1}{2}$."

This speaks volumes in favour of the operation, where the indication is clear, and we quite agree with Dr. C. in thinking that the "ill success which has attended the opera-

tion in this country is owing to the late period at which it has been undertaken." By hesitation and delay, when promptitude is required, the period of success is passed, and like other surgical operations, (the trephine, &c.,) its utility has suffered from its abuse. Appended to these essays is a paper on the umbilical cord; a report of the Western Lying-in Hospital for five years, and one creditable to the institution; a chronological catalogue of British and foreign midwifery, as a guide to the student, and which was much wanted; and nineteen plates of the various obstetric instruments which have been used. Our limits prevent detail on these points, but we take our leave by strongly recommending the volume to the notice of our readers, as being a most comprehensive history of operative midwifery, and extremely valuable in the statistics of the subject, which will fully repay any time or attention they may bestow upon them.

On the Diseases of the Hip Joint, with Observations on Affections of the Joints in the Puerperal State. With Plates. By William Coulson. London: Longman, &c., 1841.

We have received and read with pleasure the second edition of Mr. Coulson's work on the hip joint. The former edition appeared in 1837 in quarto, and we approve highly of the change made by the author in publishing the present in large octavo; it has a more business like appearance, if it be less elegant; and it is a true remark, that condensation of manner is generally accompanied by condensation of matter.

The former edition may be considered simply as a treatise on a single disease of the hip joint, the scrofulous affection, ordinarily characterized as morbus coxæ; but in the latter a much wider field of observation is opened, the various inflammatory and nervous affections, in and about the joint, are considered in a very clear and intelligible manner, and an admirable chapter is added on those curious affections of joints occuring after delivery which have lately excited so much attention. The vignettes illustrative of the positions assumed by those afflicted with disease, are graphic and, well executed as are the plates of the dissections of hip joint disease; one of these carries with it peculiar interest, being a delineation of the disease in its very earliest stage,

shewing the round ligament and synovial membrane in a state of intense inflammation, and a small spot of ulceration commencing in the cartilage close to the insertion of the ligament into the head of the femur. This preparation was taken from a patient of Mr. Key's, and on it our author framed his theory that the disease commenced in inflammation of the ligamentum teres, or the synovial membrane covering it. Although this is not insisted on so strenuously in the last edition as in the former one, still we believe that it is a much more probable and usual commencement of the disease than in the cancelli of the bone as supposed by Rust and Albers. Many cases which have come under our own observation lead us to think that the synovial membrane is in most cases the primary seat of the disease, but we have not data as yet sufficient to induce us to believe that the ligamentum teres is the part primarily attacked, although we are quite aware of the fact that ulceration and destruction of that ligament occur very early in the disease.

Mr. Coulson, in speaking of the causes of hip joint diseases, says :

"Many considerations prove that this is a constitutional disease, and that the affection of the hip joint and all its metastasis are the mere external demonstrations of a pathological condition in which extensive functions, not a limited locality, are involved.

"That it is principally a disease of the vital or nutritive functions is evident from this, that the mental or thinking functions are unaffected, and that the locomotive functions are involved only in proportion to the progress of the primary disease.

"That in the vital system it is not absorption nor circulation that is deranged, but mainly secretion appears from this, that the secreting system seems to be extensively affected.

"1st. Debility of constitution is remarkably favourable to the occurrence of this disease, and as to ulceration of the cartilage in particular, it is manifest that it is a constitutional affection, from the circumstance that a disposition exists in some persons to take on this disease in several joints at the same time, without sufficient local cause to bring it into action. Accordingly, both hip joints may be affected at the same time, of which I have seen instances, and two cases or more of the disease may occur in the same family, of which I have seen several examples.

"2. The liver, the largest secreting organ, seems almost universally to be affected in this disease.

"3. The mesenteric and inguinal glands, which collectively form an immense secreting organ, are very frequently involved.

"4. It is generally, if not always, associated with scrofula, an undoubted disease of secretion.

"5. Dropsy not unfrequently occurs in the last stage of hip disease.

"6. It is characterized by nothing so strikingly as the secretions that attend it from the first puffing of the capsule, till those immense abscesses form by which the hip is destroyed.

"7. Its existence impedes no other secretion or excretion. The catamenia are usually regular during its continuance, and they continue so unless the powers of life give way, and death is likely to occur.

"8. It is impeded by greater secretions, (ex. gra., the disease nearly ceasing during pregnancy.)

"9. Every means of cure attended with success operates by promoting absorption, as iodine, &c.

"Now if this view be correct, what must be thought of the value of many of the topical remedies which we are in the habit of using on patients—I mean issues, setons, moxæ, &c.

"These views it will now be found apply to, or are illustrated by every circumstance connected with the various causes or supposed causes and conditions of the disease. Under most of these circumstances it will be observed, that not only are the secreting organs powerful and active, but the whole vital system is large, while the locomotive system is proportionally feeble, and becomes a sacrifice to the excesssive derangement of the former."

It is on this principle that this disease is more prevalent in some countries than in others; as in England and Holland of which the Saxon population is characterized by the magnitude of the trunk and of the vital organs, while the limbs and locomotive system are small and feeble. In Holland, according to Campor, one person in twenty-eight in his time went lame.

The same principles apply to ages. In children, similar proportions and conditions of these systems prevail: the trunk is large, the limbs are short, and they are peculiarly subject to this complaint.

Hence it is that even prior to birth the organization of the joints becomes deranged, and such changes are effected as to cause this form of disease.

Mr. C. accounts on the same principle for the greater frequency of the disease in women than men.

Having spoken of gout, rheumatism, and syphilis, all diseases of secretion, giving rise to this disease, he says of gonorrhœa:

"Gonorrhœa, equally a disease of secretion, sometimes gives rise to it. A gentleman whilst taking copaiba for the cure of a gonorrhœa, owing to the discharge from the urethra, having suddenly stopped was seized with a severe attack of the synovial mem-

brane of the right hip joint, from the effects of which he did not recover for some years."

Cold, small-pox, measles, scarlet fever, various extraneous affections, suppressed lochial discharges, and stoppage of the lacteal secretion, are stated as capable of bringing on this disease, and external violence is mentioned as a means of calling into action the tendency to disease already existing in the secreting system.

A very judicious remark occurs at page 68:

"I may observe, that all the parts of the hip joint have a peculiar character; they are both low in regard to vascular action, and in the scale of sensibility. The value of this is evident, seeing that there is no rest to this joint, and that every motion of the body is accompanied by a movement of the head of the os femoris in the acetabulum; for even the slightest motion, however remote, causes less or greater change in the gravity of the body, and compels us to poise the trunk anew upon the hips. Were those parts more sensible we should be perpetually lame. Happily there is sufficient sensibility to form an adequate guard against excessive motion of the joint, and little enough to permit the natural use of the limb—a nice adjustment of sensibility to function. The left hip joint, which is feebler than the right, is observed to be more frequently affected."

We do not find much novelty in the treatment recommended, which is grounded on the distinction to be drawn between strong subjects and those of scrofulous habit.

"In strong persons, or those of a rheumatic diathesis, or where cold, external violence, or gonorrhœa has given rise to the disease, remedies of a different character must be employed than in persons of a weak or delicate constitution, in whom the local mischief is a mere sign of constitutional disturbance. In the former class, rest must be prescribed, for every motion of the body gives pain; blood must be taken by leeches or cupping from the region of the joint; and the quantity must be regulated by the amount of pain and strength of the patient. Internally, calomel and opium should be given, so as to affect the mouth.

"Sometimes, however, from a peculiar state of constitution, mercury cannot be exhibited internally, or, if it is given, a most distressing train of symptoms occur, such as pain and uneasiness about the epigastrium, tenesmus, frequent but scanty mucous stools, more or less tinged with blood. The evacuations are at first more copious, and relieve for a time the irritation of the bowels, but as they become more scanty and more frequently repeated the irritation and general uneasiness are increased. Opium exhibited internally relieves at first, but soon loses its effect. An

opiate injection is most to be depended on; about fifteen drops of the liq. opii sedativ. may be thrown up the rectum in half a pint of gruel, or thin starch, with advantage. As the bloody stools seem to indicate that there has taken place some slight lesion of the mucous membrane of the intestines, which is aggravated whenever the mercury comes in contact with it, this medicine must be immediately left off. If, however, the mercurial action can be borne, it is generally sufficient, if early set up, to arrest the complaint; but there are some patients in whom the disposition to the disease is so strong, after it has once come on, that it returns the moment the mercurial action is discontinued, in such cases mild mercurials, as hydrarg. c. cretâ, with Dover's powder or the Plummer's pill, may be given in alternative doses, and may be continued for some time, for it will not do on every fresh attack to have recourse to strong mercurial courses, which, though they relieve for the time, increase the tendency to the attack. In combination with this alternative course sarsaparilla in various forms should be administered.

"If mercury cannot be borne, colchicum should be administered, combined with some alkaline aperient, at regular and stated periods. When the intensity of the inflammation has been in some degree subdued, a blister may be applied over the region of the hip, and, if necessary, several blisters may be employed in succession. I have always adopted this plan in preference to keeping one open.

"The diet of the patient is, in this stage, a point of the highest importance: it should be light, little animal food should be allowed, and spirits and all fermented liquors carefully prohibited. The patient will experience great relief from the hot bath in this stage, provided there be no great motion or exertion used at the time of taking it; and if the hot bath cannot be taken warm fomentations should be frequently applied to the part."

Although great stress is laid on the constitutional treatment, local applications are not forgotten; counter-irritants are recommended when the inflammatory stage has passed by, and the plan of treatment by stimulant strapping, adopted by Mr. Scott, is strongly recommended.

The Brighton Infirmary for scrofulous diseases afforded Mr. C. a very large field for observation; and the remarks made with regard to the good and bad effects of sea bathing appear to us very judicious. "Warm salt water bathing agrees with nearly every patient." He is of opinion that the sca air is injurious in cold weather.

A great deal of valuable information is given with regard to the administration of iodine; and the formulæ and plan of administration pursued by Lugol is given in full; the combination of iodine with iron is much lauded.

The chapters on nervous and hysterical affections of the joint contain much interesting matter; and there is an excellent though concise section on sciatica; and the concluding chapter on puerperal affections of the joints forms a bibliography of almost all that is known on this abstruse subject, and is illustrated by several descriptive cases.

We lay down this book, having perused it with pleasure, and we feel no scruple in recommending it as a useful publication to our medical brethren. S. L. L. B.

The Accoucheur's Vademecum; or Modern Guide Book to the Practice of Midwifery. By Thomas Travers Burke, M.D. London: 1840.

The title the author has chosen for this little work is to us by no means an attractive one; on the contrary, it always creates in our minds a distrust of the value of the publication which bears it. To all professional guide books and vademecums we have a strong objection, from a conviction, that to most young persons short cuts to knowledge are highly injurious, from their tendency to lead them from habits of research and personal observation, which alone can teach them their profession. We own, therefore, we sat down to that now before us much prejudiced against it; but, on perusal, we were gratified to find it far less superficial than its name led us to expect, as, independently of conveying on the principal points connected with midwifery, the opinions of the highest authorities, and adopting the judicious plan of allowing those authorities, as far as practicable, to speak for themselves; several subjects, altogether omitted, or only briefly alluded to in most treatises, have had a considerable space allotted them in this. We particularly refer to the important chapters on the mechanism of parturition, and obstetric auscultation, besides which the diseases of menstruation, the evidences of pregnancy, and some affections of new-born infants have received a fair share of attention. The work is written in a style concise yet clear and explicit, and on the whole we consider it a useful compilation. There are some points, however, in which we think emendations necessary in future editions, and to these we shall chiefly confine the few remarks our limited space permits us to offer.

The first chapter opens with Dr. Collins's admirable exposition of the general principles to be observed in conducting

a midwifery case, and thence the author takes occasion to explain the mode of passing the catheter. We perfectly agree with Dr. Burke, that the most delicate attitude this operation can be performed in is the usual obstetric position. Thus we avoid the necessity of carrying the finger between the nymphæ and over the clitoris, and can at once introduce it over the orifice of the vagina, when the fold which contains the urethra, followed outwards, will lead directly to the entrance of the canal. It is greatly to be regretted more emphasis was not laid on the ill consequences resulting from an incautious use of the instrument, as the persons amongst whom this book will probably have an extensive circulation are just those who require on this subject an impressive warning. A lamentable example of extensive laceration of the urethra, from ill judged attempts to pass a catheter, after the fœtal head had become impacted in the pelvis, having presented itself to our notice a short time since, makes us feel how useful a solemn caution on this point might prove to the young practitioner. On the other hand it would have been well if the author had insisted more fully on the importance of evacuating the bladder in all cases, particularly where delay occurs in progress of labour, as to a neglect of this precaution must be referred most of the examples of vesical fistula, which, to disgrace of the science, so frequently present themselves at our institutions. The author, indeed, has very properly remarked, "we should never attempt to introduce the forceps until we have completely emptied the bladder," he might have added that the same rule holds good with respect to the use of the crotchet and all other operations in midwifery.

In the section which relates the progress of the fœtal head through the pelvis, there has been appended, in the form of a note, Naegele's valuable description of the mechanism of parturition which the student can thus in a very short time make himself familiar with. This is a subject which has hitherto been too much neglected, and yet it is one both highly interesting and useful. There is no more engaging pursuit than observing the beautiful provision whereby a third or fourth position is able to right itself, and make the half revolution which brings the occiput under the pubis. Nor does such an employment recommend itself only as it reveals an unexpected and curious phenomenon, but is full of utility, as a correct idea of the situation of the head, which can only be obtained by the careful education of the finger, is of essential importance before having recourse to instru-

ments. And here we must express our dissent from the high authority, whose directions for the rectification of malpositions of the head, the author largely quotes. With all the deference due to the experience of Dr. Burns, the opportunities we have had of seeing his mode of treatment put to the test, have convinced us of the correctness of Dr. Collins's precept, that in the great majority of cases it is not only useless but injurious to attempt to change the position of the head, and we are aware that Dr. Kennedy holds the same opinion. Without doubt, to rupture the membranes for such a purpose, before the head has entered the brim, is an uncalled for proceeding; and, in face presentations, if we interfere thus far, which is by no means necessary, it is much better to turn at once. Nor is it at all so easy a matter as is described to produce any alteration we please in the position of the head after it has descended into the pelvis, either by the mere pressure of our fingers or even by the use of the vectis. Observation has taught us, that variations from the natural position have a tendency to rectify themselves; and that a practitioner who well understands the mechanism of parturition sometimes has it in his power to aid the natural process. Thus, where delay takes place during the transit of a head in the third or fourth position, it will generally be found to occur when it has made one-half the turn, that is to say, when the sagittal suture occupies the transverse diameter of the pelvis; here, then, pressure judiciously applied may help it over this line, after which the head, in most instances, comes down with rapidity. But in such cases would we restrict our interference, relying on the facility with which the cranium becomes moulded to the space it has to traverse, unless it has become evidently arrested in its passage, then of course it would be necessary to resort to artificial assistance.

The third chapter, which treats at length of natural labour, opens with some good observations on the inexpediency and danger of hurrying delivery, and very properly deprecates the administration of stimulants, unless imperatively required. But with respect to the important subject of suspended animation in the infant, the author has not been sufficiently explicit. He has not drawn the distinction between the child which presents symptoms of congestion, and that failing from debility; and yet, on the discrimination of these opposite conditions will depend the success of the measures adopted. It would have been well, too, if, instead of giving to artificial respiration so prominent a posi-

tion amongst his remedies, he had mentioned it only as a *dernier resort*, for it is a means seldom requisite, when the proper treatment is resorted to, and when incautiously performed, is of infinite mischief to the little patient. In extreme cases we have seen Dr. Kennedy employ electro-magnetism with the best effects. The apparatus he used was composed of Daniell's battery, Callen's coil, and Richey's contact-breaker.

The next passage calling for remark is the following:

"Our primary attention in a footling case," the writer observes at page 90, "is to make the toes turn toward the sacro-iliac articulation of the mother, and, as we would counsel, to bring down both legs in one grasp. After the dilatation of the os uteri has fully taken place, we are to pass up the hand in as unirritating a manner as possible, lay hold of the legs, and if the uterus be sufficiently quiescent, turn the child in the direction indicated, bring the feet into the pelvis, unless we find that they have come down properly of their own accord, which they often do, indeed, usually, when both feet present together."

Now, against the directions here given, although we are aware they have the sanction of high authority, we must distinctly protest, as such management savours too much of meddling midwifery, and encourages a tendency the inexperienced are already too prone to, that of hurrying breech presentations, under the mistaken impression that they thus give the child the best chance of surviving; instead of which, such a proceeding produces an imminent risk of lacerating the yet unyielding structures of the mother, and of destroying her infant, from the increased pressure it is subjected to. We are convinced there is no necessity whatever for interfering in either a breech or a footling case before the hips have been fully expelled, unless some special circumstance on the mother's part demands a speedy delivery. If this rule be observed, it will be found that no matter how the child may have been placed, it will, in a great majority of cases during its transit, turn *of itself*, so that the face shall be directed to the sacrum. If it do not at this time, it probably will when the arms are brought down, and if not then, it is still sufficiently in our power to aid this manœuvre, while extracting the head. We would particularly object to the practitioner, in ordinary cases, introducing his hand into the vagina, and either drawing down or altering the direction of the feet.

In treating of shoulder presentations and the operation

of turning, the observations are pertinent and judicious. We trust the salutary caution given against rupturing the uterus will be studied and remembered by the readers of the Vademecum. In describing the mode in which spontaneous evolution is accomplished, the author appears to lean to Douglas' explanation, and from the opportunities we have had of witnessing the process, we should say with great reason. We are not, however, inclined to altogether discredit Denman's explanation, as we have seen two or three cases which in a great degree coincided with it. But as the author remarks,

> "However curious and amusing those speculations may be, as to the exact order of this remarkable process, it is of far more practical importance to consider how the obstetrician should act when he neither can turn the child nor find a chance of the not very safe phenomenon of spontaneous evolution occurring."

Under such lamentable circumstances, it is our firm conviction much injury will accrue by persevering in attempts to turn. If the death of the fœtus, which will, before this, have occurred in almost every instance, be ascertained, evisceration should be resorted to, and having completely emptied the thorax and abdomen, the crotchet should be employed to bring down the pelvis, and thus the process nature herself adopts imitated as closely as possible.

We would willingly extend our observations to other parts of the little work before us, but the space allotted to this subject being exhausted, we must rest satisfied with remarking, in general terms, that we consider Dr. Burke has succeeded in producing a useful compendium for those who wish to gain a general knowledge of this branch of our science before they begin to study its details, and with few exceptions, a safe guide to refer to on a hurried emergency. It appears, too, an appropriate book to place in the hands of female practitioners, as the caution which it so frequently inculcates would materially tend to moderate the rashness and presumption of ignorance. The medical formulæ at the conclusion of the volume will be found of much utility by those for whom it is intended.

Observations on the Surgical Pathology and Treatment of Aneurism. By William Henry Porter, A. M.

The deservedly high reputation which Mr. Porter already enjoys as a writer on surgery, would alone predispose us in favour of the present work; but, in addition to this, our interest is excited by the knowledge which the Profession in Dublin have long had, that aneurism and diseases of the blood-vessels are subjects to which Mr. Porter has devoted particular attention, and like his excellent work on the Surgical Pathology of the Larynx, the present appears to be based on practical observation, the only source of true surgical knowledge.

Our author commences his work by the consideration of the subject of hæmorrhage, its modifying causes, the means nature employs in restraining it, as also the various different modes practiced by the surgeon. In speaking of the causes of aneurism, Mr. Porter is of opinion, that the primary cause is to be looked for in some morbid change in the arteries, and not in any of those external circumstances in which the patient may be placed, which have been, by most writers on the subject, considered at least as predisposing. On this subject Mr. Porter makes the following judicious observations:

"I cannot believe that any degree of labour, or exertion, or exposure, predisposes to the occurrence of aneurism; first, because the most laborious people in society, sailors, blacksmiths, porters, &c., are not a whit more liable to the disease than any other classes in the community: secondly, because women in the lower ranks of life are, in many instances, obliged to undergo more labour, in proportion to their strength, than men—and boys and children infinitely more so; yet we have seen the exemption that these classes enjoy: and, thirdly, aneurism is not more prevalent among the poor and laborious than among the rich and idle, in proportion to the relative numbers of these classes respectively. This latter assertion is so opposite to the generally received opinion, that many will be inclined to disbelieve it, and its truth cannot be proved for want of statistic reports; I have made it, however, from my own observation, and would appeal to any practical surgeon of experience for its corroboration. Again, it has been stated, that particular trades and callings, chiefly such as oblige their followers to keep their limbs in a bent posture, predispose to aneurism, and this is explained by the idea of the blood being forcibly impelled against the side of the vessel, in consequence of such position. Hence the prevalence of the disease amongst coachmen, postillions, horse-soldiers, &c. But there can be no doubt that other persons are equally, if not more, exposed to such influences, in whom the disease does not prevail—studious persons, and the higher orders of females, for instance: but with reference to trades, we may recollect

that tailors spend most of their time in a very contracted position, and yet no one ever considered them as peculiarly predisposed to aneurism. I cannot, therefore, admit any of these as creating a predisposition to the disease."—p. 38.

"Being satisfied that this unhealthy inflammation of an artery is one of the most influential of the exciting causes of aneurism, it would be a most interesting inquiry that could determine the circumstances that lead to its production; and having paid a good deal of attention to the subject, and investigated the history of a great number of cases, I have been led to the conclusion that intemperance, particularly in the abuse of ardent spirits, and repeated or ill conducted courses of mercury, have, at least, some intimate connexion with it. This latter medicine is seldom used in great quantities, or for any protracted length of time, unless for the cure of syphilis, and hence many have entertained an opinion that arteritis might be a result of the operation of the venereal poison. In this supposition I find Scarpa, Richerand, Coirvissart, and, to a certain extent, Hodgson, seeming to coincide."—p. 47.

In that part of our author's work, where he treats of aneurisms of the thoracic aorta, he alludes to a most important practical subject, namely, the occurrence of *symptoms* of acute laryngitis, resulting from pressure of the aneurismal tumour; he gives a case of this kind in which he performed the operation of tracheotomy:

"In July, 1837, I was requested by a professional friend to see a patient of his suffering from laryngitis, and, if I deemed it necessary, perform the operation of bronchotomy at once. It had been only of three days' standing: the symptoms were dreadfully urgent and pressing—so much so, that I thought I had never met a more formidable case; and the idea of an aneurism never crossed my mind. I proceeded to operate without delay, and some notion may be formed of the urgency of the case, when I state that I punctured the trachea with a trochar, rather than wait a few minutes for the purpose of controlling some hæmorhage that was present. After the operation, *which afforded immediate relief*, the patient was removed to the Meath Hospital, where he died, suddenly, in three days afterwards."—p. 67.

The interesting point in this case is, that relief of the difficult breathing was afforded, although there was nothing in the operation to diminish the pressure of the aneurismal tumour. Mr. Porter was once of opinion that the spasmodic affection of the larynx in these cases, was produced by pressure on the recurrent nerves; this opinion he has, however, now abandoned, and acknowledges his inability to explain the phenomenon; but whatever may be the true explanation, an analogous state of things is seen in cases of foreign bodies in the trachea, where

the difficulty of breathing is at once removed by the operation of tracheotomy, *although the foreign body may be still remaining in the trachea or bronchi.*

This is a most interesting subject in surgical pathology. But, perhaps, the most interesting part of the work to the practical surgeon is, that where Mr. Porter treats of the causes of failure of operations for the cure of aneurism; to this Mr. P. gives considerable space, illustrating it by most interesting cases and original observations, and as this is a subject not much enlarged upon by systematic writers, Mr. Porter's observations are of peculiar value.

We could, from this part of the work, give many interesting extracts, did our limits allow us to do so; and in recommending Mr. Porter's book to the early perusal of our readers, we feel bound to say, that it is a work calculated not only to maintain but to raise the character of Irish surgery.

SCIENTIFIC INTELLIGENCE.

Tenth Report of the Ophthalmic Hospital, Canton, for the Year 1839.—The peculiar circumstances under which the modified operations of the physician have been carried on at Canton show to an extent to which it could not otherwise have been known, the degree of confidence felt by the provisional government itself, in the utility and benevolent purpose of the institution.

The ophthalmic hospital continued much as usual, but with increasing prosperity, up to the 23rd of March, when foreigners, one and all, were deprived of their servants, and in a manner of their liberty. At the commencement of this state of things, the few indoor patients were desired by the senior hong-merchant to remove, and the hospital was closed. After a while, however, the officers on guard around the factories began to seek medical aid; and, though they permitted no communication with the people in general, they presently gave admittance to the physician's house, to men of rank, who were allowed a greater measure of liberty in visiting the factories. On the withdrawal of the soldiery and armed coolies, the number of patients gradually increased, but with a greater preponderance than before of official people: yet others were not wholly restrained from seeking relief for their maladies; females even overpassed the prejudices against entering the factories of foreigners. It was in August, that, finding his private residence too small for the reception of the increased number of patients, and unsuccessful in every endeavour to return to the building formerly occupied, the physician removed to the premises of the Canton Dispensary of Messrs. Cox and Anderson.

Commands were issued by the chungheĕ, against any natives passing in front of the factories, be they men, women, or children: this was applied chiefly to females by the subordinate officers, who were anxious, in consequence, that no females should be received as patients. A few days after, however, appeared a young woman of about sixteen years, from the family of the kwangheĕ. This officer, of like rank with the chungheĕ, both being what we may call brigadiers, was associated with him in the control of the foreign factories; and the breach, by one from his own family, of his colleague's orders, reduced these at once to a dead letter. There was no longer any hindrance to the access of females: they came, however, with more of reserve than formerly; and some begged to be seen in boats before the factories, or at their own residences in the

suburbs of the city: so that the evil of exclusion from the former hospital has not been without its advantages, inasmuch as it has given rise to a more ready and more frequent access into private families than otherwise would have been thought requisite.—The young woman from the kwangheĕ's family came with cataract of both eyes; and, though she would not remain as an in-door patient, but returned as soon as the cataracts were operated on, the operation was completely successful.

The smaller number of patients attending, in consequence of various restraints, has happily left more leisure for prosecuting the study of the language, and for acquiring facility of writing it, as well as of translating from it.

Among the more distinguished personages who have, directly or indirectly, availed themselves of the benefits that the institution affords, were, Howqua, the senior hong-merchant; Tsun, an officer from Yunnan; Lew, magistrate of Nanhae, and his brother; Wang, a commissioner or intendant of circuit in Kwangse, son of the Van tazhin of Macartney's embassy; the ganchăsze, the poochingsze, heads of the judicial and the financial and territorial affairs of this province,—and, not least, the high imperial commissioner Lin, of whom all have heard so much.

The total number of patients that have been admitted and their names recorded, during the year 1839, has been 800: the aggregate number since the commencement of the institution in November of 1835, about 7000.

The following is a tabular statement of the number of each disease that came under observation:

Diseases of the Eye.	
Granulations	20
Ectropia	2
Entropia	32
Triachiasis	2
Lippitudo	14
Xeroma	4
Excrescence of the lids	1
Obstruction of nasal duct	4
Disease of caruncula lachrymalis	1
Ophthalmia, acute	47
,, chronic	90
,, purulent	8
Pterygia	27
Nebulæ	37
Ulceration of the cornea	4
Opacity of the cornea	2
Staphyloma	8
Iritis, Chronic	13
Synechia anterior	2
,, posterior	4
Cataracts	27
Glaucoma	3
Muscæ volitantes	7
Amaurosis	16
,, partial	6
,, intermittent	1
Double vision	1
Weak eyes	2
Near sight	2
Night blindness	2
Fungus hæmatodes	2
Loss of one eye	22
Injury of the eye	2

Diseases of the Ear.	
Otitis	2
Deafness	27
Otorrhœa	7
Nervous affection	2
Loss of the membranum tympani	5
Deaf-dumbness	2

Diseases of the Face and Throat.

Parotitis	2
Tonsilitis	3
Cynanche	1
Aphonia	2
Ulceration and perforation of the palate	1

Diseases of the Organs of Circulation.

Palpitation of the heart	1
Aneurism of the temporal artery	1

Diseases of the respirative Organs.

Bronchitis, chronic	18
Asthma	8
Hæmoptysis	4
Hydrothorax	1

Diseases of the abdominal Organs.

Diarrhœa	2
Dysentery	2
Constipation	3
Gastritis	3
Dyspepsia	16
Ascites	11
Worms	4
Enlargement of spleen	1
Hernia, inguinal	6

Diseases of the generative and pelvic Organs.

Hernia humoralis	3
Enlargedtesticles	2
Urinary calculi	1
Injury of the prostate gland	1
Bubo	6
Gonorrhœa	2
Phymosis	1
Paraphymosis	1
Hydrocele	1
Impotence	2
Salacity	5
Hæmorrhoids	6
Fistula (in ano)	2

Diseases of the nervous System.

Paralysis	9
Idiocy	1
Insanity	2
Epilepsy	3
Hemiplegia	1
Neuralgia	4
Hydrocephalus	1

Cutaneous Diseases.

Acné	3
Tinea Capitis	3
Ichthyosis	1
Scabies	8
Porrigo	7
Vitiligo	3
Lichen circinatus	8
Elephantiasis	2
Lepra nigricans	1
Anomalous	19

General and constitutional Diseases.

Rheumatism	25
Arthritis	7
Fever, intermittent	4
Thrush	1
Anasarca	7
Scrofula	16
Syphilis	7
Dentition	1
Opium-mania	15
Abscesses	14
Furunculus	1
Periostitis of the tibia	1
Ulcers	23

Diseases of the Bones.

Disease of the hip joint	4
Caries of tibia	1
„ of os calcis	1
„ of submaxilary bone	2
„ of trochanter major	1
„ of ribs	1
Curvature of spine	2

Preternatural and diseased Growths.

Malformation of thorax	1
Nasal polypi	2
Tumours, sarcomatous	11
„ cutaneous	1
„ abdominal	2
Cancer of the breast	3

Injuries.

Fracture of both bones of the leg	1
Tendo Achillis partially divided	1
Singular enlargement in the left iliac region	1

Report of the Lying-in Hospital, Waterford, for three Years, by John Elliott, Esq., M.D., communicated in a letter to Dr. Churchill.—

Number of women delivered 340, died 0.

Male infants born alive 170, still-born 13, died 2; female infants born alive 159, still born 5, died 1.

As no woman has been delivered of more than two children at a birth, you will see from the above that there have been seven cases of twins.

Presentations—footling 5, breech 2, face 1, funis 0, hand with head 1, face to pubes 2, the rest natural.

Labours attended with accidental hæmorrhage,	6
„ „ with convulsions,	2
Women delivered with forceps,	1
„ „ by embryulcia,	2

Cases of Disease.

Inflammation of uterus or its appendages,	8
Fever,	3
Hepatitis,	2
Pneumonia,	2

Duration of Labour.

Cases not exceeding 24 hours,	303
„ „ 36 „	14
„ „ 48 „	14
„ „ 60 „	5
„ „ 80 „	1
„ „ 113 „	1
Duration of labour not marked,	2

You will, of course, understand that in the foregoing statements, each of the items is excluded from all that precede it; thus, the number of labours not exceeding thirty-six hours, did exceed twenty-four hours, and so on.

With respect to the comparative duration of the first and second stage of labour, I find that we have distinguished them in one hundred and twenty-four cases of those not exceeding twenty-four hours, and the *average* result is, that the first stage lasted nearly eight hours twenty minutes, and the second stage nearly two hours sixteen minutes. We dated the commencement of the second stage from the discharge of the waters. Of the cases of labour not exceeding thirty-six hours, we have distinguished the duration of the first and second stage in ten cases, and we thus obtain the average duration of the first stage at nearly twenty-three hours fifty-one minutes, and of the second stage at nearly four hours twenty minutes. Of the cases exceeding forty-eight hours, the stages are distinguished in twelve cases, and the average result gives for the first stage thirty-eight hours five minutes, and for the second stage six hours thirty minutes. Of the cases not exceeding sixty hours, the separate stages are marked in three instances as follows: first

48, second 1; first 48, second $\frac{3}{4}$; first 36, second 24. The one case of one hundred and thirteen hours is thus marked in the registry, first 96, second 17. Of first cases of labour we have had 62; of second ditto 56; of third ditto 50; of fourth ditto 46; of fifth ditto 44; of sixth ditto 28; of seventh ditto 18; of eighth ditto 11; of ninth ditto 9; of tenth ditto 7; of eleventh ditto 5; of twelfth ditto 3; of thirteenth ditto 1; in all 340. Such are all the results which our registry enables me to furnish you with; there have, no doubt, been minor cases of disease which I have not returned; but, I confess, our uniform success has both surprised and pleased me, especially when I reflect on the miserable state of health which some of our patients bring with them into the hospital, and that we have only two wards; one very small for receiving and delivering the women, and the second somewhat larger which they occupy afterwards, so that both are in constant occupation; the larger contains six beds, but it has three windows with ventilators, two fireplaces and chimneys, one at either end, and the door is kept open night and day, and secured in that position by a chain and padlock, and our bedsteads are made of iron.

Enormous fatty Tumour in a new-born Child.—Madame S., æt. 26, of delicate constitution, passed through her first labour easily and without any accident. A year afterwards she again became pregnant, and found herself well during the first half of her pregnancy; but for the remainder of her time was much oppressed with a sense of weight and pressure in the abdomen, which was most remarkable during each motion of the body. She was brought to bed at the usual time, and the nursetender thought the position of the child was with the breech presenting; when the waters had flowed off, it was evident that the presenting part was not the buttocks, consequently, in this dilemma an accoucheur was sent for. On his arrival he found the presenting part protruded from the os uteri, which was widely distended; it was a soft, round body, which perfectly filled the upper part of the smaller pelvis, and which could not be pushed back itself, nor would it permit the hand of the examiner to pass beyond it. Every part of this mass was equally soft, and there was not a single hard point to be found. As the throes became stronger the mass advanced to the opening of the pelvis, and by some violent efforts on the part of the lady was at length entirely protruded. Above and in connexion with this tumour appeared the buttocks of the child; the labour was soon completed, and without any further difficulty. The child, a girl, was of moderate size, thin and almost pulseless, the respiration superficial (oberflächliche) and deficient; the voice was weak and whinging, and the legs appeared to be paralyzed. A tumour of nearly double the circumference of a child's head was fixed with a comparatively small basis immediately behind the anal orifice, which was much pushed forward towards the pudenda. The surface of this tumour was for the greater part uninjured, and was of the

colour of the rest of the integuments, except at a spot opposite to the base, where redness and excoriation had occurred, and from which continuously streamed a considerable quantity of blood. Styptics and compression were employed to stop this bleeding, which appeared dangerous to the child in its feeble condition, but did not succeed, and it appeared necessary to set about removing the excrescence in order to tie the vessels whence the hæmorrhage originated. As the family did not possess all the requisites of attendance, &c., which the child would require, they consented to its removal to the lying-in hospital, and there the extirpation was immediately accomplished. The operation presented no particular difficulty, for the fatty mass was bounded and set into a tolerably firm and easily cut cellular tissue. The evident termination of the tumour, however, consisted in a prolongation of the coccyx, the cartilaginous point of which pierced into the tissue of the tumour and had to be cut off.

The tumour weighed 2lbs. 30½oz., whilst the whole child after it had been removed weighed but 5½lbs., so that the tumour was nearly half the weight of the child; it was between six and seven inches in diameter, and extended out on all sides from its peduncle. On a section being made its substance appeared to hold a middle place between brain and fat, and contained a number of divisions like the placenta, all connected together by a thin and loose cellular tissue; in many parts appeared small cretacious layers, some containing points of ossification, and others little laminæ of bone. There were also some small cavities containing a small quantity of a whitish yellow pellucid fluid; at that point where the hæmorrhage had occurred there were many cells and veins filled with blood, which were largest towards the surface. The child died twelve hours after the operation.

Autopsy.—Section of the head shewed nothing irregular, the bones of the scull as far as regards their firmness and thickness were remarkably developed; the fontenelles not large, the substance of the brain moderately soft. The thymus gland small and surrounded with fat; the lungs in many places were yet in the fœtal condition, as firm as liver and of a brownish-red colour; the foramen ovale not closed. In the abdomen nothing abnormal except excessive paleness. The spinal column and pelvis were normal, and this rendered the form of the os coccygis more remarkable, for from the hinder and lower part of the much elongated and tail-formed sacrum proceeded a cartilaginous growth into the midst of the tumour, and formed alike its root and peduncle. This peduncle, which at its origin was of the thickness of a quill, could be followed into the tumour nearly three-fourths of an inch, but the farther it proceeded the thinner and softer it became, and at last was lost in a similar colour and consistence as the tumour. —*Zeitschrift der Gesammte Medicin, Band.* 13, *Heft. IV.*

A Case of Injury of the Head proving fatal after twenty-six Years.—Dr. Härlin of Ulm has communicated the following case in

Froriep's Neue Notizen. A man who had been subject to no ailments except slight rheumatic attacks, was attacked on the 26th of April with crick in the neck, with swelling of the right side of the neck, shoulder, arm and even of the fingers. Being feverish he was bled, and had aromatic fomentations applied. On the night of the 30th, signs of compression of the brain appeared, and the supposition formed was that the patient was suffering from bad inflammatory fever, with bloody, serous, or purulent effusion on the brain. Despite of the rational treatment the man died on the night of the 4th of May. On a post mortem examination being instituted, an abscess was found in the right hemisphere three cubic inches in size, in which the substance of the brain was converted into a brownish matter and containing a piece of bone a quarter of an inch in breadth, not at all carious, but having the same appearance as if it had been recently detached from the inner table of the skull; in the folds of the dura mater two smaller pieces of bone were found, and many very small pieces having a similar appearance. In the left hemisphere there was a hollow of two inches containing a dark, reddish-coloured body like coagulated blood, of the size of a thimble, there was nothing remarkable in the rest of the brain. On the internal side of the temporal bone an irregular ridge of callus shewed where union of the bone had taken place, and left no doubt on the minds of those who saw it, that the inner table of the kulld has been detached to the size of a square inch. These port mortem appearances were unintelligible until the father of the deceased stated that his son, when nineteen years of age, (twenty-six before his death,) fell, and struck his forehead so violently against the pavement that he lay senseless for half a minute. As there was no external wound a surgeon was not consulted. The persons about him also recollected that the deceased had often complained of stings like electric shocks occasionally passing through his head.

Air in the Veins.—Amussat, in his "Recherches sur l'introduction accidentelle de l'air dans les veines, et particulierement sur cette question; l'air en s'entroduisant spontanément par une veine blessée pendant une operation chirurgicale peut il causer subitement la mort? gives the following comparative statements:—Of 26 animals wounded in the veins of the breast, and in which the air entered spontaneously, 24 died, viz. rabbits, after $1\frac{1}{2}$, 2, 3, 5 minutes; dogs, after 1, 3, 6, 10, 16, 24, 27 mins., two surviving; sheep, after 29, 56 mins.; horses, in 14, 15, 17, 26, 28, 35; 1 stallion, 44 mins., another 50 do., $2\frac{1}{2}$ hours. One survived by pressing its neck against a tree, and thus forming a coagulum, after the removal of which it died in 26 minutes. The right side of the heart in these animals was filled with foaming blood. The lungs sound; very few bubbles of air in the veins of the brain.

In a second set of experiments the animals (sick) were weakened by venesection or arteriotomy, and they died so much the quicker in proportion as they were reduced by loss of blood or pain. Dogs

died in 1, 4, 6, 25 mins.; sheep in 7, 16; horses in $3\frac{1}{2}$, 9, 12, 13, 16, 23 minutes.

In the third set a tube was kept in the veins, and the symptoms assumed their greatest degree of intensity, thereby proving that diseased veins, which stand open after being wounded, are extremely dangerous.

Air blown in, slowly or quickly, acted most powerfully when it was done by the mouth. In such cases air was found both in the arteries and in the left ventricle.

The results of this work shew,—1. The possibility of air entering, and the danger. 2. The increase of danger during deep inspirations and in states of weakness. 3. Death by distention of the right side of the heart, or cutting off the circulation (the former may produce also paralysis.) 4. The distinction between the entrance of air before and after death. 5. Entrance of air only during inspiration. 6. Necessity of the bandage in bleeding, &c.

Cases and Observations illustrative of the Mercurial Treatment of some Forms of incipient Phthisis Pulmonalis. By William Munk, M. D., Physician to the Tower Hamlets Dispensary.—[*Continued from* No. LV. p. 164.]—In these instances we may occasionally, by very careful and prolonged examinations, detect at long intervals, especially on a deep inspiration, a solitary and minute mucous bubble. Here we generally find that expectoration is exceedingly slight, or altogether wanting; whilst in the cases presenting the subcrepitant or mucous rhonchi, expectoration does exist, although rarely to any great extent. Little or no information can be obtained from percussion during the earlier periods of the disease, the chest then sounding perfectly well. As the case, however, advances, more or less dulness is perceived; and when this occurs, the active auscultatory signs undergo a corresponding modification. At first there is an increase in duration and intensity of the expiratory sound, giving to the whole respiration a sensation of greater roughness; this increasing, passes onwards into well-marked bronchial respiration, coincident with which there is bronchophony and bronchial cough. It were useless to trace these cases further; tubercular matter has now been deposited in considerable quantity, the case is one of confirmed phthisis, and the period for the employment of mercury has passed.

Such will be found the commencement and course of many of the cases of phthisis which are amenable to mercury in their earlier stages. Sometimes, however, the disease takes its origin in a severe and universal bronchitis, which at once calls for medical interference and for active treatment. There is here great feverishness, considerable embarrassment of respiration, and intense bronchial rattles over the whole chest. General and local blood-letting, with tartar emetic, seem to be here clearly indicated; and although it be found in the sequel that these measures are not so well borne

as the symptoms would have led us to expect, still from their employment the patient derives considerable relief. The activity of the disease is broken, the fever is diminished, the respiratory oppression relieved, and the bronchial rales lessened both in intensity and in extent. The stethoscope indicates, however, that the morbid action still lingers within the lung, and that the superior lobes are the parts now alone affected. The remedies which had proved effectual in the removal of inflammation from the other parts are powerless over these; and their continuance serves but to debilitate the patient, and to hasten on the disease to an incurable stage. The lesion here existing may, however, be removed, but its removal can be accomplished in no other way than by the employment of mercury, so as to produce its specific effects upon the constitution. If the mineral be not had recourse to, the case goes on from bad to worse; percussion and auscultation evidence the deposition of tubercular matter within the lung, and incurable consumption is thus induced.

Another and not unfrequent mode in which this disease originates remains now to be noticed. Allusion is here made to those cases the commencement of which is distinctly traceable to some general disorder of the whole system, as, for instance, essential fever, the exanthemata, influenza, &c. In the course of all these there is a great liability to congestions, determinations of blood, and inflammation. The bronchial mucous membrane and pulmonary parenchyma become frequently affected in this manner, the supervention of such morbid state being, in some instances, proclaimed by symptoms so well marked, that the lesion from whence they originate cannot be overlooked. In far the greater number of instances, however, the local disease is to a greater or less degree latent, the marks of general disturbance being so numerous and severe as to cast into shade or obscure the more feeble manifestations of low morbid action in the lung. The former class of cases being at once recognized, are promptly met by appropriate treatment, the local disease is subdued, and the disastrous consequences to which it tends thus averted. In the latter instance, however, the local affection often goes unrecognized, and no measures are adopted for its removal; or, if it be discovered, its severity is frequently underrated, and means employed which prove inadequate to the end proposed. In either case the phenomena are similar to those before enumerated; they indicate a low inflammatory action of one or more tissues of the lung, existing only in the top of the organ, or, if more extensively spread, greatly preponderating in these parts. Should this condition continue, the patient presents a like succession of symptoms to those we have described above as occurring when phthisis supervenes upon catarrh, modified, however, in some measure, by the nature and usual course of the disease in whose progress they have arisen. There is an analogous mitigation and modification of the local and general symptoms, together with the addition of other phenomena dependent on the disordered state of the lung, and the disturbances in other organs

to which its sympathetic relations give rise. The patient experiences what appears to be a long, tedious, and unsatisfactory convalescence. After a time he retrogrades considerably, and the symptoms of pulmonary disease come prominently forward. The efforts of the practitioner to relieve the condition of general disorder are set at nought by the local disease, which proves an insurmountable weight to the resiliency of the constitution. Emaciation progresses, the symptoms of hectic appear, and after a time the physical signs testify the deposit of tubercle in the lung.

It may probably be urged by some that the term phthisis cannot with propriety attach to the lesion of the respiratory organs above described, inasmuch as the active and passive auscultatory signs differ widely from those commonly laid down by writers as indicative of this disease, and point only to low bronchitis or pneumonia. The justice of this objection we are forced to admit, if the term phthisis be employed in a limited sense, and as expressive only of those cases in which tuberculous matter has already been deposited within the lung. But regarding the subject in a practical point of view, we come to an opposite conclusion: for abundant experience testifies that the transition from the state above described to that of confirmed phthisis is gradual and progressive; that in point of fact the condition now under consideration is neither more or less than that which determines scrofulous deposition to the lung, whilst it is, at the same time, the very action by which this deposit is effected.

In the three cases above described, phthisis, from neglected though mild bronchitis—as the sequel of severe bronchial inflammation inefficiently treated, or as ensuing upon bronchial or parenchymatous inflammation occurring during the course of other and general disease—there is found only a sibilant, clear, mucous, crepitant, or muco-crepitant rhonchus; these persist for a long period, and are, during the early stage, unaccompanied by other signs. The sonorous rhonchus is rarely heard; the mucous exists in a diminutive form, approximating in character to the crepitant; the expectoration but rarely undergoes the same rapid succession of changes observed in pure ordinary bronchitis, but remains clear, tenacious, spumous, observing more the habitudes of peripneumonic or of bronchopneumonic disease. This combination of symptoms points therefore more to the minute bronchial tubes as the seat of disease, than to either the larger tubes or the parenchyma. It presents much resemblance to that form of disease termed capillary bronchitis, but is attended by less expectoration than is usually found in this disease, when occurring in its more usual site, the lower portions of the lung.

Now if it be asked, says Dr. Stokes*, what gives these signs of bronchitis their value as diagnostics of incipient tubercle, the answer is, that it is not by their mere characters (for these do not differ from

* Treatise on the Diagnosis and treatment of Diseases of the Chest, p. 392.

ordinary bronchitis,) but it is from their situation,* localization, and combination, with comparative dulness of sound, that they derive their value. The same phenomena scattered over, or even existing intensely throughout the lung, but being equable, and unaccompanied by dulness, would not only have no value in the diagnosis of phthisis, but would render the existence of tubercle improbable. Simple bronchitis is seldom circumscribed, while that of the consumptive is commonly so: the latter begins in the upper portion of the lung, remains obstinately fixed in the air tubes, gradually spreads downwards, and while in its first stages in the lower lobe is combined with tuberculous ulceration in the upper: it may be intense in the upper lobe while the lower is altogether free, or engage the whole of one lung while the other is scarcely affected. These are not the characters of ordinary bronchitis.

A new aspect has been given to the pathology of tubercular disease by the investigations of Sir James Clark,† Dr. Carswell‡, and the late Dr. T. J. Todd§, who have proved that, for its production, a previous morbid condition of the system must exist: in other words, that a necessary element in the causation of scrofula is a certain cachexia or abnormal state of the fluids of the body. In what this consists has been most clearly shown by Dr. Carswell, whilst the circumstances leading thereto have no less satisfactorily been elucidated by Sir James Clark and Dr. Todd. From the united labours of these gentlemen have resulted the important pathological law, that *tuberculous matter exists as a morbid constituent of the blood, is eliminated from it by a process analogous to, if not identical with, secretion, and is thus deposited, in a visible form, in different organs or parts.*

The contamination of the blood exists in some cases for a long period, and proceeds to a great extent before the deposition of tubercle commences. It seems not improbable that in such instances the sanguineous fluid becomes so thoroughly saturated (if the phrase be allowable) that an attempt at relief is then commenced, and nature sets about the work by eliminating the morbid product in conjunction

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* Louis, says Dr. Cowan, has *invariably* found that the sibilant, mucous, and submucous râles resulting from simple catarrh, originate in the *lower part of the chest*, while bronchitis complicated with pulmonary tubercles is always situated in the *upper lobes*. Simple bronchitis usually attacks *both* sides of the chest, while rhonchus from tubercles is *at first* almost constantly confined to the upper lobe of one side. Of the immense importance of this law there can only be one opinion, and, in many instances, attention to the seat of bronchitis would dissipate much doubt and anxiety, and early indicate the real nature of an affection which, without the knowledge of this fact, would frequently be confounded with simple catarrh, and thus frustrate the hopes both of the patient and practitioner.

† Treatise on Pulmonary Consumption Lond. 1835.

‡ Art. Tubercle, Cyclop. of Practical Medicine, and illustrations of the Elementary Forms of Disease. Fascic. Tubercle.

‡‡ Art. Indigestion, Cyclop. of Practical Medicine, and in Sir James Clark's work on the Influence of Climate, and Change of Air, &c.

with the secretions. Dr. Carswell is of opinion that the surfaces of mucous and serous tissues are those upon which tubercular matter is chiefly deposited; that as regards relative frequency the former very far exceeds the latter; for here, he says, "as into the great emunctory of the system, it appears to be separated from the blood, and becomes visible to us under a variety of forms." Dr. Carswell is at issue with most pathologists as to its deposition in the molecular structure of organs. In no one instance has he witnessed it so situated. Our own observations tend to an opposite conclusion, although we doubt not that the most frequent sites of tubercle are those pointed out by Dr. Carswell. We believe, with most pathologists, that tubercular matter has no peculiar site; that it *may*, under certain circumstances, appear in any organ or part of the body, making its appearance thereby a lesion of nutrition, whereby such matter is secreted in place of, or in union with, those molecules of the blood, which, appropriated to the organ itself, become an integral portion of its structure, and thus repair the losses it is ever undergoing.

This deposition is frequently a silent process; it commences and proceeds to a certain point, unaccompanied by any known pathological state, or, if phenomena of disorder do occur, they are to be regarded as effects or coincidences rather than as causes. It will probably be found that this relation obtains only in those cases where scrofulous cachexia, and the contamination of the blood, which is its essence, has proceeded to a considerable degree, and where the local deposit is the result of the overcharged condition of the blood, rendering relief by the elimination of some portion of the morbid constituent indispensable.

In other, and, perhaps, the majority of instances, tubercle is deposited long ere the cachectic state has arrived at the degree above supposed. In these such an event is determined by irritation or inflammation, under the influence of which there is a large afflux of blood to the part, and coincident with it an increase and modification of secretion. In lieu of the results of common inflammation, as occurring in a healthy subject, there is here deposited tubercle, or coagulable lymph variously modified, the modification consisting in the approximation of that product more or less closely in character to tubercle. The analogy which exists between these two morbid products, and the mode in which one may pass into or give origin to the other, has been clearly shewn by Dr. C. J. B. Williams. Its further consideration here would extend these remarks to an inconvenient length; I shall, therefore, content myself with referring those who may wish to enter fully on the subject to the third volume of the Library of Medicine, p. 166, *et seq.*

The close connexion existing between irritation or inflammation in one or other of the tissues of the lung, and tubercle as cause and effect, has been particularly dwelt upon by Andral,* who enumerates

* Pathological Anatomy, translated by Drs. Townsend and West, vol. ii. p. 553.

the following as the principal morbid alterations accompanying the development of tubercle:—first, hyperæmia of the bronchia of a certain size; second, hyperæmia of the air cells and ultimate ramifications of the bronchia without obliteration of their cavities; third, hyperæmia of the same parts with considerable thickening of their parietes, and obliteration of their cavities; fourth, an effusion of blood into the tissue of the lung; the blood thus effused coagulates, becomes a living part, and secretes tubercle.* In reference to these pathological conditions he states that, in certain cases, and those not the least numerous, *the morbid alterations of the lung were evidently prior to the formation of the tubercles, and contributed to produce them.* In the Clinique Médicale there is a passage explanatory, in some respects, of that just quoted. In it the author alludes to the influence of bronchial inflammation as giving rise to tubercle; but the explanation will, *mutatis mutandis*, apply with equal force to the same pathological condition elsewhere situated. "What ought never to be lost sight of," says he, "is this—that, in order that inflammation of the mucous membranes of the air-passages shall be followed by the production of pulmonary tubercles, it is necessary to admit a predisposition. This being admitted, we can easily conceive how, in one individual, very slight bronchitis is sufficient to produce tubercles, whilst others do not become phthisical from the most severe and long-continued pulmonary catarrh." Sir James Clarke also expresses his belief that inflammation in a tuberculous constitution may give rise to the deposition of tuberculous matter in place of coagulable lymph, which, in healthy subjects, is its natural product, and thus inflammation may be one of the immediate causes of tuberculous disease.†

I have quoted these authorities at length, because I conceive that the recognition and just appreciation of the facts and opinions therein contained will have a most important bearing upon practice, and because each day's experience leads me to the opinion that cases like to these are far more numerous than is now generally admitted. The existence, in one class of cases, of inflammation within the lung, to be succeeded by the deposition of tubercle as cause and effect, is widely different from those in which an inverse relation obtains—where tubercular matter is first laid down, and inflammation follows either as consequence or coincidence. The causes determining tuberculous disease towards the lung are, in these instances, widely different; in one it is well known, and within the reach of medicine; in the other it is unknown, and the means at our command are comparatively inoperative. One class of cases are curable, though, from circumstances, not always cured; the other are incurable, as regards medicine, though nature's efforts are, in a few rare instances, more successful.

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* This opinion of the secretion of tubercle by the blood itself M. Andral has since eschewed.

† Op. citat. p. 46.

As inflammatory action is in these cases the distinguishing characteristic, and throughout performs so important a part, it is but natural that, to its consideration, much attention should be given, and that its removal should be held as a canon of the first importance in our treatment. Blood-letting, either general or local, counter-irritants, emetics, digitalis, &c., the means which experience testifies to have been the most efficient in the treatment of phthisis, act principally by the removal or diminution of inflammation, determination of blood, congestion, and the disordered movements in the system to which their existence gives rise. These measures are, however, rarely sufficient for the perfect cure of the pathological conditions above mentioned, more particularly of the variety termed scrofulous, or the modification impressed upon inflammation by its occurrence in a scofulous constitution. Highly important as auxiliaries, they must in no case be neglected, but as controllers of the disordered action of the capillaries, which constitutes inflammation, they are, in the majority of instances, inoperative. A medicine was wanting more potent in its effects, one whose action was evidenced not so much upon the central organs of the circulation as are blood-letting and digitalis, but on the periphery of the system, the capillaries.

Iodine and its numerous preparations have been recommended to public confidence, as a medicine calculated in some degree to meet this want. The action of iodine is manifested principally as a stimulant of the capillaries; by giving tone to these vessels it expedites the circulation through them, obviates and removes congestion, and frees the secretions. It exercises little, if any control, upon the peculiar action, whatever it be, that constitutes inflammation; but after the removal of this state a degree of congestion commonly remains, and here iodine is most effectual. Reliance must not, therefore, be placed on iodine in the class of cases and stage above described, although it comes in, as we shall shew, with excellent effects, at a somewhat later period of the treatment.*

It has, by abundant experience, satisfactorily been proved, that in the treatment of common inflammation there are no means at our command which, in point of efficacy, will bear comparison with mercury. However much pathologists may differ as to the proximate cause of this state, or writers on the effects of medicines as to the mode of action of this mineral, they one and all agree in the truth of the above assertion. The knowledge of this fact suggested to the mind of Dr. O'Beirne the employment of mercury in scrofulous affections of the joints. He regarded the inflammatory action attending these cases as a point of primary importance, and to its imme-

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* There are peculiarities in the action of the analogous substance, bromine, which seem to point it out as peculiarly adapted to certain forms of scrofulous disease, especially phthisis. I am at this time making comparative trials with the bromide and iodide of potassium, the results of which, I hope, at a future period to lay before the Profession. Of its superiority in some forms of cardiac disease, I am already pretty fully convinced.

diate removal directed all his attention. The results of the practice he was thus led to adopt proved the correctness of his ideas, no less than the value of the measures upon which he relied, whilst the adaptation of a like practice to those forms of phthisis during the earlier periods, of which inflammatory action is the predominant and all-important local condition, led to scarcely less successful results in the hands of Drs. Graves, Stokes, and Corrigan.

Mercury has heretofore been frequently proposed by distinguished authorities as a remedy in consumptive cases. It has never, however, acquired any great celebrity in the treatment of this disease; the proposals and recommendations for its employment, whensoever or from whomsoever originating, appearing to have passed unheeded by the bulk of the Profession, or if attended to and followed to have fallen short of the expectations which its too sanguine advocates had raised, and thus to have dropped again into disuse. Among those who have recommended mercury we may mention Dr. Rush, and other physicians, his contemporaries in Philadelphia. A perusal of their writings will clearly substantiate the charge of what to us must appear indiscriminate practice—a fault less justly perhaps to be attributed to them than to the imperfect state of our science at that period. Upon no point in practical medicine were our predecessors more likely to run into error. The absence, until within a very short period, of any correct information as to the precise nature and production of tubercle, the limited period during which mercury is in truth available, and the difficulty which existed, previous to the introduction of the new methods of diagnosis, of distinguishing the proper cases and their stage, were circumstances which one and all tended to render somewhat indiscriminate the application of mercury. Here, as in all other instances of indiscriminate practice, the evilresults must have far exceeded the beneficial. Under such circumstances it cannot be matter for wonder that careful practitioners should have opposed the practice, or that teachers should have laid it down to students as an axiom in practical medicine—that the employment of mercury in scrofulous disease, but especially in phthisis, was fraught with danger, and could be productive of no good.

The injurious effects now alluded to, as ensuing from the employment of mercury in phthisis, are less attributable to the existence of pulmonary disease than to that of general disordered action of the whole system, of which the former is the consequence, and a certain indication. Our best writers agree in the belief that the full action of mercury in the scrofulous cachexia is singularly injurious; that the depression which the medicine thus given produces is more effectual than any other in increasing the cachectic state, and, should tubercle exist, in hurrying it through its various changes. It has, moreover, been asserted, and probably with some justice, that the mercurial fever once excited has a great tendency to increase hectic, and even in cases where this last condition has never appeared to pass gradually into and terminate in it. Hence will appear the justice of

the view entertained by Dr. Stokes, when he terms the remedy a two-edged sword, and expresses his conviction that its exhibition must not be lightly attempted.

In coming to a conclusion as to the employment of mercury in any particular case, we have to decide on the propriety of employing means which are calculated to remove local disease, but do so at the expense of, and with some detriment to, the general constitution. In a word, our conclusion hinges on this, whether the local or the general disease be at this time the most important. Dr. Stokes writes as follows:*—"As to the general employment of mercury in incipient phthisis, I am anything but sanguine, yet that by its assistance in removing irritation from the mucous membrane and parenchyma we may occasionally arrest the development and progress of tubercle, seems more than probable, for there can be little doubt that in the scrofulous habit there is more danger from the persistence of irritation of the lung, than from the action of mercury on the system."

The existence, then, of such irritation or inflammation, whether membranous, parenchymatous, or, as is most frequently the case, the two combined, is that which calls for immediate attention to the lung, even at a temporary disregard to the constitution. Dr. Corrigan says,† that the use of mercury is in removing that degree of low local inflammation, which, allowed to remain unchecked or improperly treated, would terminate in tubercular deposition and consequent phthisis. And Dr. Graves,‡ after mentioning those cases of consumption which arise gradually and insidiously, whose commencement it is impossible accurately to determine, goes on to say, "the reason of this is because the tubercular affection of the lung is in such patients only of secondary importance, the disease which produced it having affected the whole system before the lung was contaminated. This happens in some, but in others an opposite train of phenomena is observed, and scrofulous inflammation commences in the lung before any general contamination of the system has taken place. It is in such cases, and such only, that mercury ought to be tried, and it will avail nothing except where the commencement of the scrofulous inflammation of the lung has arisen suddenly, and in consequence of the operation of some obvious cause, as catching cold, or the occurrence of hæmoptysis."

It may then, in general terms, be stated, that the absence of pre-existing tubercular deposit from every organ of the body is the circumstance justifying our neglect of the contra-indication which scrofulous cachexia presents to the employment of mercury. The word "pre-existing" has been here introduced, because it seems likely from the physical signs that, in some cases terminating favourably, tubercular matter has been present in the lung before the mercurial treatment was commenced. In them, however, such deposit was trifling in

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* Op. citat. p. 450.

† London Medical Gazette, 2nd Series, vol. iv. p. 74.

‡ Loc. citat.

amount, and secondary to, and dependent upon, the bronchial or parenchymatous inflammation, for the cure of which mercury had been employed.

An interesting and most important object of inquiry is, how far such tuberculization may proceed, and the case nevertheless be amenable to mercury. Facts are wanting to decide this point. In one of Dr. Stokes's favourable cases "the antero-superior portion of the left side sounded comparatively dull." In another "the right clavicle and scapular ridge sounded slightly, but decidedly dull." In one of my cases (No. IV.) there was slight dulness of the left scapular ridge; in another (No. VI.) the same phenomenon, in an exceedingly slight degree, was perceptible upon percussing the left scapular ridge, the clavicle, and the two superior ribs. I must, nevertheless, in the face of these cases, express my conviction that the presence of dulness diminishes greatly our chance of success; and did the previous history and general symptoms leave me in much doubt as to the propriety of employing mercury in any particular case, the existence of a very moderate amount of dulness would induce me at once to omit its use. I agree, indeed, with Dr. Hughes in thinking, "that appreciable dulness on percussion is very far from being an early physical sign of phthisis, and that when it is clearly distinguishable below one or both clavicles, or in the acromial regions, the complaint has generally advanced too far to be effectively treated." It must, notwithstanding, be borne in mind that dulness on percusion may even in cases of undoubted phthisis arise from other causes than the deposition of tubercle, and may either spontaneously or from the effects of treatment be considerably diminished, and even altogether removed from certain portions of the lung. The cause of dulness in such cases is either inflammation or congestion, and it is to intercurrent attacks of this nature, and their subsequent removal, that we are to attribute the alteration of the phenomena above mentioned. Many writers are of opinion that the dulness occurring very early in consumptive cases is more owing to congestion or inflammation of the lung than to the presence of tubercle. That such is the correct explanation of the cases above referred to, where dulness has been recovered from, seems more than probable. Every one at least must admit that such an explanation is more consonant with our knowledge of the habitudes of tubercle, and the effects of medicine, than that which would attribute it to the absorption of tubercle itself. Admitting the occasional absorption of tubercular matter to be a well-established fact, it yet remains to be proved that such a process is favoured by the action of mercury upon the system. Without, however, denying that such may be the case, and allowing that analogy is in favour of the supposition, it must be confessed that the present state of our science by no means warrants us in receiving this effect of mercury as more than probable.

The period, however, which may elapse between the commencement of the indisposition and the deposit of such a quantity of tubercle as to produce dulness, varies much in different cases. It may be

stated, perhaps, as ranging between three weeks and three months. I have known the lung so far solidified within the former period as to put the use of mercury quite out of question. The attack supervened in this instance upon measles. In the course of three weeks the superior portions of each lung gave a perfectly dead sound upon percussion, and there was an entire absence of respiratory murmur in the same parts. The patient, æt. 18, died within nine weeks from the commencement of his illness, and upon examination cavities were found in the apex of each lung; the surrounding parts being completely solidified. That the condition above described may continue for eleven weeks, and so small an amount of tubercle be deposited as but slightly to impair the sonoriety of the lung, is proved by the case of Thomas Smith, (No. VI.) below detailed. My experience has not been sufficiently extensive to enable me to say whether or not it may last longer without giving rise to marked dulness. Two cases I have witnessed, the histories of which were so perfect as to leave little or no doubt as to their nature, where a period little exceeding three months sufficed to induce well-marked dulness, and render the use of mercury inadmissible. One of these cases came under my observation fourteen, the other fifteen weeks from the commencement of the illness. That the usual course and tendency of scrofulous bronchitis or pneumonia are not represented by these extremes is sufficiently probable. The rapidity of progress observed in one instance, and its protracted duration in another, must be looked upon as exceptions to a general rule. The average duration of this primary stage, will, I think, be found in a period about intermediate between the extremes above mentioned. Although speaking doubtfully on this point, I am at least certain that the rapidity of progress within a given period increases in a direct ratio with the duration of the disease. Thus, for instance, if we compare two patients, one of whom has been suffering five weeks, the other eight, and whose symptoms at the time of our comparison are as nearly alike as possible, we shall find that after a given time, say a week or a fortnight, a much greater progress has been made in the latter than the former. It is thus only we can explain a circumstance constantly noticed by such patients, that their symptoms were at the commencement comparatively stationary, or at most made but slight progress; that subsequently they became more and more rapid in their course, and latterly each day has sufficed to induce a well marked increase in every symptom. We deduce from this fact an important practical precept—to lose no time in putting the patient under the specific influence of mercury, and this more especially when the case has been at all protracted. The delay of a few days early in its course may be without ill effects, and will probably, in many instances, be advantageous, by giving time for the employment of important preparatory or auxiliary means; but where such symptoms have persisted for a much longer period, any considerable delay is likely to be followed by serious consequences; for the disease may thus advance to such a degree as to place it out of reach of medical assistance.

Admitting the injurious influence of mercury upon the general constitution, yet having determined upon its employment for the removal of local disease, an object of no slight importance is to administer the medicine in such a manner as to obtain to the utmost the beneficial effects it is capable of producing upon the lung, whilst we avoid, as far as possible, the damage it may do to the constitution. The more immediate of the injurious consequences of mercury are fever, great nervous irritability or disorder of the alimentary canal, whilst the more remote, though not less important, morbid states are, in a great measure, dependent upon, and originate in, one or other of the three conditions just enumerated. To obviate, then, or diminish these, as far as practicable, is our only chance for good. Much may be done, in the way of prevention, by the employment of preparatory treatment—a point too much neglected in the present day, but to which the attention of the Profession has recently been directed in a forcible manner by Dr. Colles. Fever, in the proper sense of the word, is a rare result of mercury in the scrofulous diathesis. It does, however, sometimes occur, and chiefly in those individuals who present more or fewer of the indications of plethora—who have a firm, unyielding pulse, and other indications of the phlogistic habit. These, it must be confessed, are rare concomitants of the scrofulous diathesis: they frequently occur, however, in the form of pyrexia, as symptomatic of local inflammatory action; but whether primary or secondary, their existence predisposes strongly to the occurrence of mercurial fever. In a primary or idiopathic state we rely chiefly on aperient medicines, saline diaphoretics, quiet, and low diet. These means, pursued for a few days, are usually sufficient to reduce all inflammatory disposition, and to pave the way for the mercurial course. But when originating in local inflammation, other measures, as blood-letting, either local or general, may be required in addition. This feverish condition, despite all preparation, will commonly occur in a greater or less degree immediately preceding the establishment of mercurial action on the gums. It is evidenced by the usual phenomena of pyrexia, and by an aggravation of the local symptoms, for the cure of which mercury has been employed. The application of a small number of leeches, and the administration of saline diaphoretics, will suffice to control these symptoms, which, however, either spontaneously diminish or subside on the establishment of ptyalism. As the more frequent consequence of mercury we notice nervous irritability, which, in the scrofulous habit, it is next to impossible wholly to avoid. A clear state of the intestinal canal, and a healthy aspect of the evacuations, are the conditions best calculated to ward off such a state. If not already existing, they should, therefore, be obtained by medicine ere the use of mercury is commenced. Notwithstanding this preparatory treatment it will usually be advisable to combine either sedatives or narcotics with the mercurial. A light bitter infusion may, in some cases, be advantageously substituted for or combined with the sedative. This practice is called for more particularly where, in addition to great debility, there is a clean, moist,

ongue, healthy condition of the excreta, and copious perspirations. Sarsaparilla often acts kindly as a soother of the irritable state of the nervous system, producing a greater tranquillity during the day, and more comfortable nights than will any selection or combination of narcotics. To this end the infusion of Dr. O'Beirne, prepared with lime water, seems peculiarly adapted. Disordered condition of the alimentary canal is a frequent accompaniment and cause of the nervous irritation above mentioned. It may, however, occur, *per se*, but whether alone or in combination its removal is a point of the first importance, in our treatment. Where there is reason to apprehend the supervention of this condition, the exhibition of mercury should be preceded by a mild, yet efficient laxative. Rhubarb with soda and a few drops of tincture of hyoscyamus in an aromatic water, will here be found highly beneficial. Any irritation or uneasiness remaining after the free evacuation of the bowels will commonly subside in a short time under the use of alkalies with hyoscyamus and mucilage. Mercury, in its mildest form, should then be entered on, and its action may be guarded by combination with an alkali, as chalk, or with this and Dover's powder.

During the mercurial course attention to diet and regimen must be rigidly enforced. The patient should be placed on the farinacea, or milk ; animal food, fruits, vegetables, fermented, vinous, and spirituous liquors, being altogether proscribed. He should inhabit a large, airy, well-ventilated apartment, constantly maintained at one temperaure, and, in addition, should wear next the skin a fine flannel garment, enveloping the whole body from neck to foot. With the preparatory and concomitant measures now recommended mercury will generally be well borne, and its use, when once commenced, must be regularly continued until the gums become affected. From an irregular and indecisive administration of this medicine ill effects will almost invariably result. Should it, therefore, manifestly disagree, its exhibition must be immediately and finally desisted from. In other instances, where but slight phenomena of disorder occur, it becomes a question, to be decided only by the circumstances of the individual case, whether, despite of these, to continue its employment or withdraw the medicine and attempt to remove the cause upon which its injurious effects appear to have depended. In the latter instance we may, perhaps, be justified in once more resorting to its use; but if it again disagrees, the medicine must be at once withdrawn, never more to be employed.

I have usually combined in one formula, with the mercurial, ipecacuanha and a sedative: the frequent irritative and distressing cough commonly attending this disease, proving, as it does, a constant source of disquietude through the day, and of restless nights, with the results of broken rest, are indications sufficiently clear (independent of those derived from the general habit) for the administration of sedatives. Hyoscyamus or conium are those which I principally employ; but where these fail of producing the desired effect, recourse may be

had to hydrocyanic acid, belladonna, the salts of morphia, &c. Ipecacuanha acts beneficially in freeing the expectoration, and, I am inclined to think, determines the action of mercury more particularly to the bronchial mucous membrane.

However beneficially these measures may operate, it must not be forgotten that the employment of mercury is but preparatory to other and more strictly curative treatment. After the removal or suspension of local disease by mercury, an equally or even more difficult task remains of correcting the cachectic condition upon which has mainly depended the local lesion. The patient, no less than the practitioner, should remember that from extreme and immediate danger he has only been snatched by severe and almost equally dangerous means; that the same liability to local disease exists as before, ready again to start into existence upon the application of the slightest exciting cause. One great object in administering mercury is to gain time for the employment of measures to restore the general health, by removing a local action which, allowed to continue, would give rise to such disorganization as quickly to place the patient out of the pale of cure, and long ere means calculated to work a salutary influence on the constitution could take effect. Unless this truth can be fully admitted, and the practice to which it leads rigidly enforced, mercury should upon no account be administered. It does not fall within the purport of this paper to discuss the treatment best adapted to the cure of scrofulous cachexia. This has, indeed, been so fully done by Sir James Clark, in his thirteenth chapter, as to leave nothing to be desired.*

With these prefatory remarks I proceed to detail the nine cases which I have subjected to the mercurial mode of treatment. Five of them have recovered; one was temporarily relieved, but died subsequently of phthisis; three experienced little or no benefit from the treatment adopted. These, with the cases of the Dublin physicians, are twenty-one in number, of which eleven were cured, three considerably benefited, six experienced no relief, and in one, the medicine disagreeing, could not obtain a fair trial.

Case I.—April 25, 1838. Mr. J. T. æt. 25. Frequent short and hacking cough, scanty expectoration of a white spumous fluid, hurry of breathing, sensation of heat, and fulness at the upper part of each lung; shooting pains between the shoulders; well-marked hectic; copious morning perspirations; pulse 100, small, quick, and easily excited; loss of strength and flesh; bowels have a tendency to purging; urine deposits a pinkish sediment. The chest sounds well upon percussion in every part: the ear applied over the scapulæ, and on the anterior surface of the chest as low as the third rib, detects a

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* Pitcarne, as quoted by Allen, Synop. Univ. Med. ed. v. p. 159, Lond. pursued a practice not unlike that herein recommended: "Quamdiu tabes est in primo gradu et probabile est sanguinem non esse extravasatum ulcusve nondum factum debet ante usam decoct: ex lignis et dum purgantibus utimur adhiberi mercurius dulcis non quidem cum purgantibus simul eodem die sed sine purgantibus post aliquot dies."

clear muco-crepitant rhonchus, most abundant on the left side, the natural respiratory murmurs being unmasked over the remainder of the lung. Got wet through in the early part of March: had a rather severe attack in the chest, for which he was cupped between the scapulæ, took aperient medicine, and calomel, with James's powder, at night. By these means he was much relieved, the cough alone remaining; but during the last three weeks, or more, has become rapidly worse, the cough increasing, whilst expectoration, feverishness, emaciation, and shooting pains about the shoulders have made their appearance. Was in perfect health before catching cold. Has been free from any affection of the chest, with the exception of occasional attacks of common catarrh, which, in all previous instances, has quickly subsided. Has lost one sister, æt. 22, from phthisis, and an elder brother is now dying from the same disease.

Hirud. vj. infra sinistrum, et iv. infra dextram claviculam.

℞ Hyd. Chlor. gr. j.; Ext. Hyos. gr. ij.; Pulv. Ipecac. gr. ss.; M. sextis horis. Milk diet. To be clothed in flannel.

28th. Increase of fever, greater hurry of breathing, oppression about the chest, and slight viscidity of expectoration.

Hirud. iv. infra sing. clavic.

May 1st. More comfortable; has a coppery taste in the mouth; gums look spongy, but there is neither tenderness nor ptyalism.

4th. Mercurial action established; cough less frequent; pains of the shoulder gone; expectoration diminished; breathing less hurried. There is increase of fever, and copious perspirations, continuing the whole day.

Pil. j. nocte et mane.

From this time there was a rapid improvement; the mercurial action was maintained for a few days, and allowed to subside gradually. He then took two or three saline aperients, and was placed on sarsaparilla, iodide of potassium, and tincture of hop. The stethoscopic signs vanished, and in three months he was, as he still continues, in the enjoyment of perfect health.

Case II.—May 8, 1838. Farringdon General Dispensary. H. S., æt. 26, a porter, caught cold about eight weeks since by getting wet in the feet. Had rigors, which were succeeded by high feverish symptoms, severe cough, soreness over the front of the chest, great difficulty and hurry of breathing, and dull heavy pain of the head. Was attended by a surgeon on the Surrey side of the water; lost blood twice from the arm, and once by cupping below the bladebones; took medicines, which gave rise to vomiting and purging. Soon got the better of the more severe symptoms, and was enabled to return to his employment; a slight degree of cough and expectoration, however, remaining. These two symptoms have of late increased so rapidly as to induce his master to send him to the Dispensary. The cough is now extremely frequent; expectoration of a greenish-yellow colour; breathing very rapid, especially on exercise; emaciation, loss of appetite, hectic fever, copious morning perspirations, small rapid pulse, and great lassitude. An abundant, very

minute, clear mucous rhonchus is heard at the top of the right lung; proceeding downwards this became coarser, more scattered, attended with the sibilant, whilst in the lowest portion, and on the left side, the respiratory murmur is unmasked. The resonance on percussion is clear over the whole chest.

Cal. gr. j. ter die.

11th. Much purged; symptoms rather worse than better; increase of fever, and more restless nights.

Sing. pil. adjic. Opii, gr. ss.

18th. Purging ceased; mouth sore: in other respects much the same.

Hydr. Chlor. et Opii, aa. gr. j. omni nocte.

22nd. Improved: cough less frequent; expectoration diminishing; breathing less hurried; mouth very sore.

Om. pil. Gargar. è liq. Sodæ Chlorinatæ.

25th. Expectoration almost gone; cough less frequent; increase of debility, and great emaciation; tongue clean; bowels natural; pulse excessively weak; restless nights. An occasional mucous bubble at the apex of the lung is all that can now be heard.

℞ Quin. Disulph. gr. j.; Acid. Sulph. dil.; ♏ x.; Tinc. Camph. co. ʒj.; Inf. Cascarilla, ʒxj. M. ter die.

June 15th. Expectoration ceased, respiration natural; is gradually recovering strength and flesh. Has entirely lost all feverish symptoms, but there remains occasional dry and irritative cough.

℞ Morph. Acet. gr. 1-8th; Aquæ, ʒj. tussi urgente.

℞ Quin. Disulph., Ferri Sulph. aa. gr. iss.; Pulv. Cinnam. co. gr. ij. M. ter die.

July 13th. Perfectly well; has recovered his strength, entirely lost the cough, and every other pulmonary symptom. Auscultation and percussion indicate a healthy state of the thoracic organs.—Discharged.

A prescription was given him for a mixture, containing iodide of potassium, liq. potassæ, and infus. calumbæ.

May 30, 1840. H. S. continues in good health, and a minute examination of the chest convinces me of the perfectly healthy condition of the lung.

Case III.—Sept. 24, 1838. Mrs. R., æt. 31, had a severe attack of influenza in July, from which she has never perfectly recovered. After the removal of the more urgent symptoms, she gained a little strength by change of air, wine, tonics, &c., but soon fell back again; the cough, which had never entirely ceased, becoming more and more frequent, is now attended with expectoration, slight in quantity and viscid in quality; rapidity of breathing; sense of tightness about the chest; small, feeble, and rapid pulse; emaciation, and hectic. There is irritability of stomach, thirst, diarrhœa, occasional griping pains, and slight tenderness of the abdomen; tongue rather red towards the edges, and covered in its centre, and at the base, with a layer of dirty mucus: dulness of percussion over the right clavicle. There is heard, anteriorly and posteriorly, in the upper

portion of this side of the chest, an occasional sibilant rhonchus; more evident than which, and in a great measure overpowering it, is a subcrepitant. Immediately beneath the clavicle there is slight increase of vocal resonance, and the expiratory murmur is, if anything, more prolonged than natural.

Dextro inguini admov. Hirud. vj. et postea cat. commune.

℞ Pot. Nit. gr. v.; Sodæ Sesquicarb. gr. x.; Ext. Hyos. gr. ij.; Mist. Acacia, ʒij.; Dec. Cydoniæ, ʒvj. M. ter die.

27th. Diarrhœa lessened; stools more natural; tenderness diminished; gripings still continue. A large poultice over the whole abdomen.

30th. Abdominal symptoms much relieved; thirst diminished; tongue cleaner, and less red. Pectoral symptoms worse.

℞ Hyd. c. Creta, gr. iij; Pulv. Ipecac. co. gr. iv.; Cretæ præp. gr. vj. M. sextis horis. Haust. è Mist. Cretæ et Kino si opus sit.

Oct. 2nd. The mercurial has been tolerably well borne; the bowels remain quiet; she complains of sleepless nights, and of oppression about the chest.

Empl. Cantharidis infra claviculum.

℞ Morph. Acet. gr. ½; Aq. Rosæ, ʒj.; M. horâ decubitus quotidie sumendus.

7th. Much the same; sleeps better, but the cough more troublesome; sibilant rhonchus gone; subcrepitant more abundant and extensive.

12th. Slight tenderness of the mouth; symptoms much the same; dulness more marked.

15th. Soreness of mouth vanished, notwithstanding the regular employment of the powders. Gets gradually worse.

℞ Hyd. Chlor. gr. iss.; Pulv. Ipecac. co. gr. v. M. 4ta vel 6ta quaque hora.

21st. Mouth again slightly affected.

27th. Mercurial action has been steadily kept up, but without any amelioration; active and passive auscultatory signs increasing; cough constant; breathing very hurried; expectoration presents streaks of a yellow colour. No benefit resulting from the mercurial it was withdrawn. The case went on, gradually increasing, strength failing, pulmonary symptoms becoming daily more distressing; cavities were at length detected, and a severe attack of diarrhœa coming on, she sank rapidly, and died on Dec. 28th.

Case IV.—Mar. 26, 1839. A young woman, æt. 27, had a slight attack of scarlet fever in the latter part of January. She was treated by aperients, and, on account of a pain in the chest, a little difficulty of breathing, and a cough, a blister had been applied to the sternum. This gave relief, and feeling herself much better, she returned to her situation; being, however, still troubled with cough. She got gradually worse, the cough becoming more frequent; respiration hurried. She suffered from thirst and considerable heat of skin. On applying for advice she stated that cough and shortness of breath, much increased on the slightest exertion, were the most pro-

minent symptoms. She had occasional pains in the chest, expectoration of a white mucous and spumous fluid, brought up with difficulty, and adhering closely to the sides of the containing vessel. The skin was hot; pulse quick, frequent, and sharp; tongue white. There was considerable thirst, loss of appetite, and slight morning perspirations. She felt extremely weak, and had, within the preceding eight or ten days, rapidly lost flesh. The left scapular ridge was slightly dull; there was here diminution of respiratory murmur, with slight increase of vocal resonance, together with a clear subcrepitant rhonchus, which last existed under the left clavicle, as low down as the third intercostal space. The remaining parts of the chest sounded well upon percussion, and the respiratory murmur there, somewhat puerile, was unaccompanied by rhonchus of any kind.

V. S. c. brachio ad ʒ xij.

℞ Antim. Pot. Tart. gr. ss.; Pot. Nit. gr. viij.; Tinct. Opii, ♏ iij.; Aq. ʒj. M. 4ta vel. 6ta qq. hor.

28th. Feverishness diminished; pulse less sharp; thoracic symptoms and physical signs unaltered.

31st. Pulse rapid, soft, and weak; heat of skin much diminished; copious perspiration; tongue no longer white, but covered at its base with mucus; complains of great debility. No improvement in the condition of the lung.

℞ Hyd. Chlor. gr. j.; Ext. Hyos. gr. ij. M. 4tis horis.

April 3rd. Slight feverishness; increased difficulty of expectoration; subcrepitant rhonchus more intense.

Sinist. Scap. admov. Hirud. xij.

4th. Relieved; dulness of scapular ridge diminished; gums look spongy.

6th. Ptyalism established; cough, dyspnœa, and pain of chest diminished; crepitation lessened.

Pil. j. nocte et mane.

9th. Still improving; mouth keeps very sore; dulness no longer perceptible; subcrepitant rhonchus replaced by the mucous; expectoration free, and purulent in appearance.

Om. pil.

12th. Gradually improving; mouth less sore, expectoration more copious.

Mist. Cascar. comp. ʒ iss. ter die.

28th. Expectoration all but gone; strength and flesh returning; breath no longer hurried.

May 12th. Thoracic symptoms gone, and physical examination gives a most satisfactory result: experiencing, however, some fulness about the abdomen, and there being torpor of the liver, she had six leeches to the anus, and took, thrice daily, a mixture, containing taraxacum, carb. of soda, tinct. of hop, and sarsaparilla. Under this treatment she lost every symptom of disease, and regained her average weight and usual appearance.

Case V.—Jan. 19, 1839. S. B., æt. 23, of tall and slender make; guard on one of the northern coaches. Dyspnœa, much in-

creased by exercise; frequent cough; difficult and scanty expectoration of a clear viscid fluid; occasional pains about, and sense of constriction in, the chest; heat of skin constant throughout the day, but with a feeling of chilliness towards the evening, and occasional slight perspiration in the morning: in other words, pyrexia, merging into hectic; pulse small, rapid, somewhat sharp, and easily excited; tongue white; considerable thirst, anorexia, and emaciation. His present illness has been of five weeks' duration; was brought on by coming up to town on a cold and very wet night. It commenced as does a common catarrh. This was for a fortnight entirely neglected, he still continuing his journeys through the most inclement weather. Finding the indisposition increase, he went to a druggist in one of the provincial towns, who gave him a mixture, consisting, according to his own shewing, of oxymel of squills and paregoric. From this he derived no benefit, and becoming each day worse and worse, was desirous of laying up for a few days. Circumstances prevented his doing so, and he continued his duties until laid up by another cold and wet night. He was prescribed for, and visited at home by a druggist in Whitechapel; but receiving no benefit, my advice was requested by his brother. The chest sounded well. In the scapular regions of either side, but more particularly on the right, a coarse crepitant rhonchus existed; heard also on the anterior of the chest, as low as the fourth rib, but being here less evident than in the back; respiration was slightly puerile in the lower lobes, but unattended by any abnormal sound.

V. S. e brachio ad ℥ viij. vel x.

℞ Hyd. Chlor. gr. iss.; Ext. Hyos. gr. ij.; Pulv. Ipecac. gr. ij. M. ter die.

21st. Blood cupped and buffed; felt relief from the bleeding, but, with exception of diminution in the sharpness of pulse, the feverish symptoms are unaltered.

Iteretur V. S. ad ℥ viij.

23rd. Blood slightly buffed; pyrexia diminished; cough; difficulty of breathing; heat and fulness of chest still considerable. Stethoscopic signs unaltered.

C. C. inter scap. et sang. ℥ viij. detrahentur.

24th. Much relieved by the cupping; constriction of chest and difficulty of breathing lessened; expectoration less difficult.

26th. Mouth slightly sore; great improvement in all his symptoms; rhonchus continues; is, however, coarser, and approximating more in character to a fine mucus.

29th. Full ptyalism; cough much diminished; expectoration more easy and less frequent; the dyspnœa and tightness of chest gone. Pulse 118, small, soft, and very weak.

Pil. j. singulis noctibus.

31st. Complains now only of slight occasional cough, of the soreness of his mouth, and of great debility. Expectorates but little, and the matter brought up presents the characters of declining bronchitis.

Om. Pil. Garg. è liq. Sodæ Chlorin.

℞ Magnes. Sulph. ʒij.; Inf. Rosæ, co. ʒxij. M. sing. auroris.

Feb. 4th. Improving gradually. Symptoms and signs of pulmonary lesion diminishing.

Mist. è Quina Acid. Sulph. Dil. et Inf. Lupuli.

In six weeks from this time he was sufficiently well to be again on his coach, the stethoscopic signs having entirely ceased. He so continued until August, when without any apparent cause he began to lose flesh and strength. Cough came on, and the 18th of September, when he called upon me, a cavity was detected in the upper part of the left lung. He died January 6th, 1840.

Case VI.—March 3rd, 1839. Thomas Smith, æt. 30, was attacked on the 18th or 19th of December, 1838, with fever, which confined him to his bed for upwards of a month. Suffered a good deal from cough, pain in the chest, and shortness of breath, for the relief of which he had leeches, and subsequently blisters, applied to the front of the chest. He was considerably relieved, but never wholly lost the cough; did not thoroughly recover his strength, but was sufficiently well to return on the 17th of February to his situation, as porter in a Manchester warehouse. He then got wet feet, and increased his cough, which was attended with breathlessness on slight exertion, and a sense of heat within the chest. Getting worse he called on me this morning. The following symptoms were then observed: pallor of countenance, flushing of the cheeks, breathlessness, frequent dry cough, no expectoration, aching pain at the upper part of the chest, worse on the left side. Emaciation and debility, hectic, sleepless and restless nights, tendency to morning perspirations, which are best marked about the chest; pulse 118, small, soft, weak, easily excited; tongue covered at its base with a thickish layer of mucus. There is slight dulness of the left scapular ridge, left clavicle, and two superior ribs. Here the respiratory murmur is more indistinct than on the opposite side; gives the idea of being moister, but neither mucous, crepitant, or sub-crepitant rhonchus can be detected. The same character of moisture is impressed upon the respiratory murmur at the apex of the right lung, but is unaccompaaied by any other abnormal sign.

Emp. Canth. infra sing. Clav.

℞ Hydr. Chlor. gr. j., Ext. Hyos. gr. ij., Pulv. Ipecac. gr. ss. M. 6ta. quaque hora. To keep within doors, be clothed in flannel, and live upon milk.

10th. Mouth sore; in other respects much the same.

Pil. j. nocte et mane.

13th. Fancies himself a little better, but complains much of the mouth.

Garg. e Liq. Sodæ Chlor.

18th. Better, cough less frequent, breathlessness relieved; sleeps more comfortably.

Pil. j. omni nocte.

20th. Slight expectoration; dulness barely perceptible; a slight mucous rhonchus is occasionally heard on the left side.

Om. pil. Mist. è Quina, &c., ter die.

25th Has to day a little feverishness; bowels confined; tongue white

℞ Magn. Sulph. ʒij. Inf. Rosæ co. ʒxij. M. bis in dies.

28th. Bowels open; feverishness subsided. Thoracic symptoms allbut gone.

Mist. Tonica ut ante.

April 15th. Able to return to his work. The lung has entirely recovered its natural state, but there exists a slight tickling cough.

℞ Morph. Acet. gr. $\frac{1}{8}$ urgente tussi. Pil. è Ferri Sulph. Quina, &c., ter die.

I saw this man about Christmas, and then examined his chest. He was perfectly well, had lost the cough, and recovered his former appearance.

Case VII.—August 31, 1839, W. F. C., æt. 28, is suffering from shortness of breath, frequent cough, expectoration of a transparent viscid fluid, occasional pains between the shoulders, sense of coldness towards evening, feverish and restless nights, morning perspirations: pulse 100, small, and rather sharp; thirst, emaciation, anorexia, occasional purging evacuations, generally much disordered. Percussionary resonance perfect; a scanty, but clear mucous rhonchus exists in the apex of the left lung, most evident anteriorly; respiratory murmur here somewhat rough. The present illness originated in influenza, for which he was treated by Mr. Metford, to whose politeness I am indebted for having charge of the case.

℞ Pulv. Rhei. gr. xv., Sodæ Sesquicarb. ϑj., Tinct. Hyoscyami, ʒss. Aq. Carui, ℥iss. M. stat.

℞ Sodæ Sesquicarb. ʒj., Ext. Hyos. ϑj., Dec. Cydoniæ, ℥viij. M. ℥j. 6tis horis.

Sept. 3rd. Evacuations more natural and less frequent.

℞ Hyd. c. Creta gr. iij., Pulv. Ipecac. co. gr. iiiss., Cretæ, ppt. gr. vj. M. ter die. Mist. Cretæ cum Kino si opus sit.

7th. Increase of feverishness, greater tightness about the chest, coppery taste in the mouth.

9th Ptyalism established; no amelioration of symptoms.

12th. Much the same. Mercury producing a good deal of irritibility; diarrhœa; stools contain much mucus.

Om. Pulv. Ol. Ricini, ℥ss. stat. Cat. com. abdomini. Mist. è Soda, Hyos., &c., ut ante.

15th. Rather more comfortable; bowels less irritable; stethoscopic signs and pulmonary symptoms increasing. The progress of the case from this time was pretty uniform; dulness on percussion appeared, cavities formed, and he died in Feb., 1840, from perforation of the pleura, and consequent hydro-pneumothorax.

Case VIII.—Oct. 7th, 1839. Miss N. æt. 19. Rapidity and shortness of breathing, frequent dry cough, dull heavy pain below the clavicles, great anxiety of countenance, emaciation, small, rapid,

and rather sharp pulse, well-marked hectic, slight r igrs in the evening, copious perspirations towards morning; nights restless, being disturbed by the cough and feverish heat. The bowels are purged, evacuations disordered; tongue red at the tip and edges, but white at the base and centre; occasional griping in the hypogastric region, relieved by pressure. Had measles five weeks since, and towards their termination was seized with increase of fever, shortness of breath, soreness beneath the sternum and cough. These symptoms after a few days diminished, but never entirely ceased, the cough and shortness of breath remaining. She was able, however, to get out of doors: soon, however, became so much worse as to confine herself to the house, then to her room, and for the last four days, since the setting in of diarrhœa, has kept her bed. Percussion elicits a clear resonance from every part of the chest. The results of auscultation are more of a negative than a positive kind. The respiratory murmur is almost, if not quite equal, in intensity, throughout the whole of the lungs; if any difference exists, it is in being a little more feeble in the subclavicular and acromial regions. There is, however, in these situations, an alteration of the respiratiory murmurs; it is as it were moister, but neither sibilant, sonorous, mucous, or crepitant rhonchi can be detected.

Hir. x. infra claviculas.

℞ Pulv. Rhei., gr. viij., Magnes. Carb. ℈j, Pulv. Ipecac. gr. iss., Tinct. Hyos. ♏ xx. Aq. Carui, ʒxiss. M. bis terve de die. A large poultice over the whole abdomen.

9th. Bowels less purged; gripings vanished; evacuations hasty, and containing much mucus; in other respects more natural; tongue less red, still white at its base; feverishness diminished. I have to-day heard in the left acromial region an occasional minute mucous bubble.

℞ Sodæ Sesquicarb. gr. x., Tinct. Hyos. ♏ xv., Mist. Acaciæ, ʒiij., Dec. Cydoniæ, ʒix. M. 6tis horis.

12th. Intestinal disorder ceased; cough, dyspnœa, and emaciation greater.

℞ Hyd. c. Creta, gr. iij., Pulv. Ipecac. c. gr. iiss. Cretæ, ppt. gr. vj. M. ter die et si opus sit. Mist. Cretæ. co. ʒiss., cum. vel. sine Tinc. Kino.

17th. Mouth slightly affected; an evident diminution of dyspnœa and cough.

21st. Much better; pulmonary symptoms daily diminishing.

Om. pulv.

27th. All the thoracic symptoms, with the exception of slight cough towards evening, have subsided; the debility and emaciation are great; there is now desire for food, and more comfortable nights.

℞ Morph. Acet. gr. j., Syr. Limon. Aq. aa. ʒvj. M. ʒj. urgente tussi.

℞ Quinæ Disulph. gr. ij., Acid. Sulph. dil. ♏v., Dec. Cinch. ʒxij. M. ter die.

From this period there was a slow, but gradual improvement. She recovered strength and flesh, entirely lost the cough, and in December was removed to Ventnor, with directions to take regularly the following mixture.

℞ Inf. Sarzæ ad formulam, Doct. O'Beirne, ℥viij., Liq. Taraxaci, ʒiss. Pot. Iod. gr. iv., Tinct. Lupuli, ʒiv. M. pars quarta primo mane meridie, vespere et nocte sumatur.

This young lady returned to London last May. I then examined her chest, and could discover neither symptom nor sign of thoracic lesion.

Case IX.—Feb. 6th, 1840. C. H., æt. 24, caught cold in December, which laid him up for a few days. Cough and soreness under the sternum were then his principal sources of complaint. He was getting the better of these, when business called him into Wales; he got fresh cold, which exasperated his cough, and gave rise to other symptoms, which, owing to neglect, have been getting gradually worse. The cough is now almost incessant, unaccompanied by expectoration, save in the morning, when a little clear spumous fluid is brought up. The breath is short, and easily hurried; has no pain within the chest, but is much emaciated, and complains greatly of debility. Well-marked hectic; copious perspiration; pulse 100, weak, but easily excited. The whole of the right lung presents a sibilant and subcrepitant rhonchus, the latter most intense in the upper lobe. The right lung is unaffected, and percussion gives a clear sound in all parts of the chest.

℞. Hydr. Chlor. gr. j. ter die. Morph. Acet. gr. 1-8th urgente tussi.

12th. Mouth slightly sore; pulmonary symptoms less severe; the rhonchi in the inferior lobe notably diminished, but unaltered at the apex.

16th. Expectoration more free, cough less frequent; stethoscope signs at the apex of the lung unaltered.

21st. Pulmonary symptoms increase rather than diminish; slight increase of vocal resonance at the upper part of the right side, where muco-crepitant rhonchus is abundant. The lower part of the lung has returned to its healthy state.

Om. Pil. Gar. è liq. Sodæ Chlor.

From this period he got gradually worse; his symptoms were met by palliatives as they arose; cavities formed, and he died on the 26th of June.—*Medical Gazette.*

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

Twenty-fifth Meeting, May 30, 1840.

Mr. Adams in the Chair.

1. *Scirrhous Development.*—Dr. Law brought forward a case of scirrhous development in various structures of the body. The patient was a woman, aged fifty, who had been admitted into Sir P.

Dun's Hospital for an attack of intestinal hæmorrhage. She stated that she had been discharging blood from her bowels for a considerable time, but had neither pain in the abdomen nor tenderness on pressure. Her complexion was sallow, pale, and anemic. Dr. Law found it difficult to arrive at any precise information as to her history. There was a peculiar appearance of one shoulder, which led him to believe that it had been dislocated; and on questioning her, she stated that she had received an injury of the shoulder from a fall. She was thrown down twice, and had the right arm and left lower extremity injured. After receiving the hurt she was carried to bed, to which she remained confined until the period of her admission into hospital. When examined by the surgeon shortly after admission, it was thought that she had dislocation of the head of the femur; and this supposition was countenanced by the appearance of a tumour on the dorsum of the ilium, such as might be caused by the head of the bone; and this was accompanied by limited motion of the limb, and inversion of the foot. Hence many persons were of opinion that it was a case of dislocation on the dorsum of the ilium. At this time the woman had been under Dr. Law's care for about ten days, and having, as he thought, ascertained the nature of the injury, he advised her to go into a surgical hospital. She expressed a wish, however, to remain where she was until she got some relief from the intestinal hæmorrhage; and on further inquiry Dr. Law found that she had frequently passed under her quantities of black tarry matter. She was treated for the melœna with some benefit, but she soon after got worse, her appetite failed, and she sunk very rapidly. On opening the abdomen, the large intestine, from the cæcum, along the tranverse and descending colon, was found to be distended with the black tarry matter, which could be seen shining through the coats of the intestine, and on making an incision, it gushed out in considerable quantity. On tracing the intestine into the pelvis, Dr. Law observed that all the parts seemed to be matted together into a hard resisting mass. On examining the viscera of the pelvis, a task of considerable difficulty, owing to the numerous and firm adhesions they had contracted to its walls, he found a tumour projecting on the left side a little below the brim of the pelvis, and on making a section perceived several glands in a state of scirrhus imbedded in its substance. He then removed all the parts, and dividing the adhesions found that a considerable portion of the posterior wall of the rectum, as well as its cellular attachment to the sacrum, had been converted into a true scirrhous mass. On making a further examination he discovered that the recto-vaginal septum had been destroyed by ulceration, and that there was a free communication between both cavities. The mucous membrane of the rectum ceased suddenly near the upper part of the vagina, the portion which remained being converted into a hard, scirrhous structure, while the neighbouring parts of the vagina had undergone a similar change. The uterus was somewhat harder than natural, but did not present any obvious marks of disease. The parts which were chiefly affected were the recto-vaginal septum, the

neighbouring portions of the rectum and vagina, and the posterior wall of the rectum, with the cellular membrane, which attaches it to the sacrum.

Dr. Law next turned his attention to the parts about the hip-joint on the left side; and having caused the thigh bone to be sawn through a little above the middle; and the symphisis pubis, and sacro-iliac symphysis to be divided, he found the muscles of the hip joint wasted, and paler than natural. On laying bare the tumour, which had been looked upon through life as the head of the dislocated femur, it proved to be an exostosis, occupying the acetabulum, superiorly, posteriorly, and inferiorly. This exostosis was soft, could be cut through with a knife with great facility, and the section shewed the cellular structure of the bony matter in a state of high vascularity. The head of the femur was also diseased, and the cartilage of incrustation destroyed at several points. A large scirrhous gland lay below the ileo-pectineal line, shewing the true character of the disease. The intestinal mucous membrane, particularly in the large intestine, was dotted in a very peculiar manner, and such as Dr. Law had never witnessed except in cases of protracted and obstinate constipation. There was also a chain of schirrous glands in the mesocolic omentum. It was remarkable that the patient had never complained of any affection of the hip joint, nor did she appear to suffer any inconvenience when an attempt was made to move the limb.

2. *Social Acephalocysts in the Brain.*—Mr. Ferrall said that the subject of his present communication was a young man, aged about twenty-three, who had been lately under his care. This individual was a remarkably strong and healthy person, and had scarcely ever complained of any illness for many years. The first symptom that was remarked in him was an unusual melancholy and abstraction, and an inattention to his business, totally at variance with his former habits. At length he began to complain of pain in the head, his face became flushed and he appeared to be suffering under some profound affection of the brain. At this period, he exhibited symptoms of meningeal inflammation as indicated by tensive pain of the head, rigors, feverishness, and loss of rest. He was blooded largely, and put on the use of mercury. As soon as his gums became tender he seemed to experience decided relief, his fever diminished, his countenance improved, and his friends thought his mind in a better state than it had been for months. Before, however, his gums got well the disease appeared to take a new turn, and he became worse than ever. All the symptoms of cerebral irritation became suddenly and violently increased, he fell into a state of low muttering delirium, and sunk very rapidly. The recurrence of the cerebral symptoms after a free use of mercury led Mr. Ferrall to suspect the existence of some profound affection of the brain, and he was therefore anxious to make a post mortem inspection. On removing the dura mater the upper surface of the hemispheres did not present any thing peculiar; the under surface of

the anterior and middle lobes were also free from disease, but on dividing the nerves to arrive at the lower surface of the posterior part of the brain and cerebellum, a large cyst burst, and Mr. Ferrall's hands were instantly filled with a number of bodies resembling fresh grapes. He regretted the rupture of the cyst, but some of these bodies had been kept in situ, and their appearance was well delienated in a drawing by Mr. Conolly, which he would beg leave to hand round. The case was one of great interest, not only from the obscurity of its symytoms, but also as being of very rare occurrence. It was very well represented in Mr. Conolly's drawing, and even a good idea of it might be obtained from the preparation before him, although it had shrunk considerably since its removal from the body. Laennec has termed this morbid production an acephalocyst; Cruvelhier has discovered the cysticercus in the human brain, but has never met with an example of the acephalocyst. Andral says, that there are two species of acephalocyst, the social and the solitary, which are found in the brain, but states that he has not seen any instance of the former. Indeed, there is no very well authenticated case of social acephalocyst on record, at least in this country. Dupuytren mentions a case in which the brain was found after death to contain a quantity of social acephalocysts, which were lodged in a large sack at the base of the cerebelum.—(*Museum, St. Vincent's Hospital.*)

3. *Compression of the Heart.*—Mr. Adams said, the preparation he was about to exhibit was a singular one, indeed he might say it was unique, for after much inquiry he had not been able to find any description or allusion to such a condition of the heart as that which he was about to submit to the meeting. Patrick Devine, aged twenty-six, admitted into the Whitworth Hospital, for an attack of chronic bronchitis, accompanied by empyema. The disease did not yield to treatment, although active measures were employed; the cough was still severe, and the quantity of fluid in the chest seemed increasing. After some time he was exposed to cold and got much worse; the dyspnœa increased, accompanied by lividity of face, swelling of the jugular veins and inability to expectorate. About this period also he was attacked with erysipelas of the right arm, on which a large gangrenous spot subsequently made its appearance. On the 19th day after admission Mr. Adams found him sitting up in bed, gasping for breath, holding by the sides of his bedstead; his eye-balls protruded, his face livid and bathed in a cold perspiration. A redish serum was flowing from his mouth, and his respiration was inaudible, except at the upper part of one lung. His belly was swollen and tympanitic. He remained for about eighteen hours in this state, and died the following night. On examination after death, both pleuræ, but particularly the left one, were filled with bloody serum. The left lung was adherent to the posterior part of the pleura, compressed and carnified. The respiratory process seemed to be carried on wholly by the upper third of the right lung. The

heart lay compressed and quite horizontal in its direction, the right ventricle folded on itself, and the whole organ compressed and flattened. Mr. Adams here exhibited the heart, the right ventricle of which, as well as the pulmonary artery, was quite empty, the ventricle itself being thrown into three rounded folds. This was the chief peculiarity of the case. Mr. Adams then exhibited the preparation, as also a cast taken from it, and observed, that this was a condition of the heart he had never before witnessed. He also remarked that the appearance of the parts would lead any one who examined them to infer that this condition was not one of recent occurrence. The parts of the heart which lay close to each other in the line of the folds were firm and of a parboiled aspect, shewing that the folds were of some standing. There was one symptom observed in this patient, viz., intermission of the pulse. How far this condition of the heart might explain it, or how far it was connected with the tympanitic state of the abdomen, Mr. Adams could not say, but he had frequently observed intermission of the pulse in connexion with abdominal tympanites. He was inclined, however, to think that for some time before death the right ventricle and the pulmonary artery had ceased to perform any functions.

4. *Healthy Condition of the Heart in Typhus.*—Dr. Stokes said that in determining the condition of the heart in typhus, one of the principal diagnostics, as indicative of softening of the left ventricle, was feebleness or absence of the first sound of the heart. To establish this point it would be necessary to shew, firstly, that in cases of softening, there is absence or well-marked diminution of the first sound, and in the next place, that where the first sound remains natural, there is no softening of the left ventricle. The case which he was about to bring forward came under the latter division. The heart before him was that of a powerful man who died on the eleventh or twelfth day of very bad typhus, with large dark-coloured maculæ. In this case the first sound of the heart remained undiminished to the last. Quite different from this is the case in which the sound is indistinct or absent. In the case before him there was no softening whatever of the muscular structure of the heart, and it was observed that throughout its whole course the first sound predominated. There was no disease of the valves, in fact, there was nothing peculiar in the heart except a coagulum which extended from the right ventricle into the pulmonary artery. How far that might have any effect in modifying the second sound, he could not tell. The case was one of those in which wine did not seem to have any good effect on the patient.

Twenty-sixth Meeting, held May 30th, 1840.

Dr. Hutton in the Chair.

1. *Malignant Tumour of the Abdomen.*—Dr. Law exhibited a specimen of malignant tumour of the abdomen. The subject from whom it was taken was a woman, aged forty, who was admitted

into Sir P. Dun's Hospital on the 21st March, 1840. The history of her case was obscure and imperfect. She stated, that about three weeks before admission, having been previously in good health, she discovered a tumour in the abdomen. Shortly afterwards she felt it more distinctly, and observed that it continued to increase in size. The abdomen then became swollen, and in the course of a few days she began to suffer from swelling of the feet. On admission the abdomen presented an irregular shape, owing to the presence of a tumour which seemed to distend its cavity, particularly in the median and right hypogastric regions. She stated that she was a married woman, had had eight children, had got well over all her accouchmens, and had only one interruption to the menstrual secretion previous to the appearance of the tumour. The tumour itself was of an irregular form, and apparently divided into three portions, one flattened and irregular, in the hypogastric region, another round or globular in the right iliac fossa, and a third of the same shape in the umbilical region. She said she did not feel any pain in the tumour, and merely complained of a sensation of uneasiness when pressure was made over the lower part of the abdomen. On applying the stethoscope over the tumour, a loud bruit de soufflêt was heard, particularly towards the right side. Her complexion was sallow and clay-coloured, indicative of the existence of profound organic disease, but her general health was not much impaired. Shortly after admission she began to complain of feverishness, loss of appetite, and constant irritability of stomach, from which she frequently discharged considerable quantities of thin greenish fluid. The tumour then began to increase in size, and after some time she was attacked with diarrhœa, which, however, readily yielded to treatment. She died about two months after her admission into hospital. On opening the abdomen, the only thing which presented itself to view was the tumour. Externally it presented an enormous mass of a circular form, and of a pearly blue appearance. Along its right margin the cæcum and ascending colon, lay firmly bound down by old and extensive adhesions; the omentum was attached to its anterior and superior surface, but could be separated from it without much difficulty. The transverse colon formed its superior margin, while the small intestine emerged from its inferior margin on the left side, and passed across to be attached to its lower border by the mesentery. The tumour itself filled the abdominal cavity, pushing up the liver, and concealing the stomach. On making the requisite incisions for the purpose of removing it; it was found to be in close connexion with the kidney, and quadratus lumborum of the right side. On making an incision through the large intestine, Dr. Law found a circular slough in the colon, and lower down a much larger one in the cæcum. The appearance of the intestine did not convey very satisfactorily what it presented when first examined, but enough remained to shew that there had been extensive ulceration, and the appearances, as seen on dissection, were faithfully represented in the drawing exhibited by Dr. Law. The whole of the intestinal tract, from the stomach down to the cæcum, presented a highly

vascular appearance; and the ileo-cæcal valve was remarkably thickened. On making an incision into the tumour, its cancerous structure was at once evident, and on carrying the incision still further, the striated structure, peculiar to cancerous degeneration, presented itself. Posteriorly, the tumour lay in connexion with the right kidney, below which the ureter was seen with its coats converted into a hard scirrhous structure; the right ovary also seemed to have undergone the same change. Two of the appendices epiploicæ were also converted into a scirrhous structure. One of the most interesting questions connected with the examination of this tumour had reference to its mode of origin. In what peculiar tissue did the cancerous degeneration commence? Dr. Law was inclined to think that it commenced in the right iliac fossa, and that the retro-peritoneal cellular tissue was the structure in which it originated.— (*Museum, Sir Patrick Dun's Hospital.*)

2. *Spina Bifida.*—Sir Philip Crampton said that among the many interesting specimens of pathological anatomy presented to the Society during the present session, he doubted if any of higher interest had been brought forward than that which he had the honour to lay before the meeting, and he thought it would not lose any of its interest, when he informed them, that the subject was still living and in good health. On the disease to which he referred, it would not be necessary to offer any remarks. Every one present was acquainted with the pathology of spina bifida, and if there was any of the students who wished to have a correct idea of it, he could have sufficient information by examining a specimen which lay before him, and for which he was indebted to the kindness of Dr. Evory Kennedy. It consists in the absence of a portion, greater or less in size, of the bony arch of the spinal canal on its posterior surface. It is not, however, confined in all cases to the external portion of the vertebral canal. Victor gives cases of complete absence of some of the vertebræ quite through, so that the finger could be passed into the cavity of the abdomen from behind. These, however, are rare instances. But in all cases, where there is a deficiency in the posterior part of the vertebral canal, the membranes of the cord are protruded by the spinal fluid, and form a tumour, generally in the lumbar region. In fact, in every case of the kind there is a tumour projecting through the opening in the defective vertebræ. Sir Philip Crampton here exhibited a drawing, shewing the ordinary appearance of the disease in the infant. In some of these cases the cord is found to be soft and pulpy, and under such circumstances there is in general, paralysis of the lower extremities. In most instances, however, there is no softening of the spinal cord and, the functions of the rectum, bladder, and lower extremity are normal. Sir P. Crampton next shewed a cast of the disease, and observed that it was a large tumour, and presented an example of the disease in the ordinary form. One of the characteristic features of the disease is, that the fluid can be forced back by compression into the spinal canal. By laying the hand firmly over the tumour, and making due pressure, the fluid is driven back into the vertebral canal, and from it into the cavity of the skull, but if it be in large quantity,

and the pressure too long continued, it is apt to produce symptoms of compression of the brain, and sometimes even fatal results have followed this proceeding. Sir P. Crampton next exhibited a cast of an immense tumour of this kind, which formed on the sacrum, and another of a boy aged sixteen, who had survived the effects of the disease, but had not been cured. In this case the fluid was still capable of being pressed back, to a certain extent, into the vertebral canal, but of course, from the long duration of the disease, and from the immense quantity of fluid in the tumour, very little decrease in its size could be produced. With respect to the treatment of the disease very little was known or attempted by any surgical practitioner up to the commencement of the present century. Sometimes the sac was opened, but the operation usually proved unsuccessful; in most instances the disease was left to itself, and terminated fatally by inflammation and suppuration of the sac, followed by inflammation of the cord and its membranes. Such was the state of our knowledge in 1809, when Sir A. Cooper's paper on the treatment of spina bifida appeared in the second volume of the Medico-Chirurgical Transactions. In this communication he detailed the treatment and results of three cases. The first was that of an infant two days old, in which he found a small tumour of the lumbar region, capable of being obliterated by pressure, the whole of the fluid passing into the vertebral canal. It immediately occurred to him, that if the fluid could be kept in, while the process of consolidation of the bones of the spine went on, a cure might be effected. Having placed the child in a prone position, he made a cast of plaster of Paris, adapted for making due pressure on the tumour, and secured this by proper bandages. He afterwards substituted for this a pad, from which much less inconvenience was experienced. At the age of eight years the child was running about and in good health, still wearing the pad, but not cured. The next case was one in which he attempted to confine the fluid by means of pressure, but having failed in this, he had recourse to a plan of treatment founded on a principle introduced by Mr. Abernethy, in the treatment of psoas abscess. He made a small puncture in the tumour, and having evacuated a portion of the fluid, he then closed the aperture with adhesive plaster. This was done ten or fifteen times, and at each operation a quantity of fluid removed. This child ultimately recovered, the bones of the spine having closed, leaving behind a loose moveable sac, and when inspected by Drs. Marcet and Yellowly some years afterwards, was found to be quite well. This, however, was the only successful case which occurred in Sir A. Cooper's practice. Another case of the same kind occurred in Sir Philip Crampton's practice. The operation of evacuating the tumour according to the mode employed by Sir A. Cooper, was performed twenty-two times, with some local irritation, but without any unfavorable or threatening symptoms. The sac gradually thickened, the consolidation of the bones went on, and in the course of seven months the cure was completed. The child is at present in good health, but has, as in Sir A. Cooper's case, a loose bag on its back. With respect to the spontaneous cure of the disease, Sir P. Crampton was not aware of any instance on record. In general the patients

die at a very early age. He felt, therefore, extremely happy in having an opportunity of exhibiting to the Society an example of spontaneous cure in the person of a gentleman who had been recently under his care for another complaint. While examining his chest, Sir Philip Crampton detected the remains of the sac, originally the result of spina bifida, and as he expressed a wish to shew it to his professional brethren, the gentleman had in the kindest manner consented to come before the meeting, and exhibit the tumour. Sir Philip here shewed the sac, which extended over the lower dorsal and the lumbar vertebræ. The fissure in the vertebræ appeared to have been originally about three inches in length.

6. *Amputation of the Limbs of the Fœtus in Utero.*—Dr. Nixon exhibited a preparation illustrative of an observation originally made by Dr. Montgomery, respecting the spontaneous amputation of the limbs of the fœtus in utero. There were about eighteen cases of this kind on record, in most of which the mutilation had been attributed to defective organization, and not to the accidental removal of parts already formed. The example which he begged leave to lay before the Society, shewed at least one of the causes of this peculiar defect. The profession were indebted to Dr. Montgomery for the first rational explanation of this very extraordinary species of amputation. His opinion is that the amputation is produced by bands of plastic lymph, which encircle and compress the limb at some certain point, or by the umbilical cord becoming twisted round a limb so as to produce the same result. The person from whom the fœtus before him had been taken, had aborted in the third month. On examination of the fœtus it was found that the cord had formed a kind of ligature round the thigh, a little above the knee. The limb was indented down to the bone, and the circulation between it and the leg was maintained only by the vessels which passed through the abductor muscles at the posterior part of the limb. Dr. Nixon then exhibited some drawings delineating various stages of this process of amputation, and concluded by observing that he was happy in having an opportunity of confirming the accuracy of Dr. Montgomery's views.

3. *Aneurism of the lower Extremity of the popliteal Artery.* —Mr. Adams said he wished to lay before the Society the results of the post mortem examination of a man named Thomas Vicars, aged 28, who was admitted into the Richmond Hospital, with a pulsating tumour in the lower part of the popliteal space. There was a strong throbbing of the artery felt over the part, and the number of pulsations were 120 in a minute. The man had night perspirations, and some difficulty of breathing. Under these circumstances, it was not easy to decide as to the safest mode of proceeding. The increasing size of the tumour in the popliteal space, the pain and uneasiness felt by the patient, as well as the urgent necessity of having recourse to some decided step, called on Mr. Adams to operate. On the other hand, the condition of the patient and the state of the arterial system suggested the necessity of caution in interfering with a case in which there were so many unfavourable circumstances. Under these circumstances, he sought for a consultation,

at which he had the benefit of Dr. Greene's advice. On examination, Dr. Greene found the lungs quite sound, and respiration natural in every part; but on applying the stethoscope over the region of the heart, he heard a loud *bruit de soufflet*, accompanying the first sound, but not prolonged into the second. The same abnormal sound was heard in the descending aorta, but was not continued into the right iliac artery, over the diseased limb. Dr. Greene's diagnosis was, that there was incipient valvular disease of the heart, and this opinion was communicated at the consultation. The result was, that no favourable result could be expected from an operation, but in case an operation should be performed, some were for amputation, others for taking up the artery. Under these cirstances, the man himself was consulted as to which operation he would prefer, and after laying before him the advantages and disadvantages of each, he decided on having the artery tied. Mr. Adams, therefore, performed the operation of tying the femoral artery in the usual situation. The ligature came away on the tenth day, and for ten or twelve days he seemed to be going on very well, when ulceration of the part took place, followed by gangrenous erosion, something like hospital gangrene, under which he sunk rapidly. On examination, extensive disease of the valves was found, increased, perhaps, since the performance of the operation. The aortic valves were found to be thickened, and filled with atheromatous deposits; two of them were formed into one thickened and diseased mass, and, perhaps, it was the rush of blood over this which caused the peculiar thrill felt in the arterial system. On examining the innominata, close to its origin, a number of filamentous adhesions were observed. What effect these adhesions could have had in producing the thrill which had been peculiarly felt at the bottom of the sternum Mr. Adams could not say. The heart itself was hypertrophied, but the auricles and the left auriculo-ventricular opening were sound. The lungs also were healthy. On examining the diseased limb, it was found that the gastrocnemius had been formerly the seat of scrofulous abscess, and that the contraction of the muscles consequent on its loss of substance by ulceration, had been followed by a species of pes equinus. The aneurismal tumour was low down in the popliteal space, and had engaged that portion of the artery immediately above its division into the peroneal and posterior tibial arteries. Here the sac lay partly covered by the internal head of the gastrocnemius, and pressing on the posterior tibial nerve, a circumstance which accounted for the violent pain felt by the patient. Above the aneurism the artery was reduced in size, and some progress had been made in establishing a collateral circulation. The only affection of the arterial system in this case was the diseased condition of the valves and the aneurism. Mr. Adams observed that he was inclined to think that the thrill of the arteries disappears in cases of aneurism after the vessel had been tied. In Vicar's case, however, the operation was chiefly a matter of necessity. As to the result of amputation he could not give any decided opinion, but in this case it was out of the question, for the patient would not submit to it. (*Museum, Richmond Hospital.*)

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XV.—*On the Anatomy and Pathology of certain Structures in the Orbit not previously described.* By J. M. FERRALL, M. R. I. A.; Member of Royal College of Surgeons in Ireland; First Medical Adviser in Ordinary to St. Vincent's Hospital.

IF it be true, that the clinical studies are most productive which are based upon correct anatomical knowledge, it must also be admitted, that the researches in anatomy are most profitable to which we are forced to return, by phenomena in disease, unexplained by, or irreconcileable with the current notions of the structures engaged. It would be an easy and not unpleasing task, to maintain this proposition by a reference to the medical literature of almost every country in civilized Europe; it is sufficient, however, for the present purpose to allude to the essays in surgical anatomy, by Sir Astley Cooper in England, or Sir Philip Crampton and Mr. Colles in this country, to render my meaning intelligible.

There are certain forms of disease which are obviously situated in some of the structures of the orbit, and which menace, and occasionally destroy the most precious of the senses by encroaching on the globe of the eye; but which do not arrange themselves satisfactorily within the classification of any authors to which I have had access, and which do not appear to me to be explicable by reference to any of the known tissues of the part. The object of the present communication is, to state briefly a few of those cases of disease in the orbit, and to describe the anatomical arrangements, to the discovery of which I was led, by the necessity of studying anew the contents of that cavity.

In the year 1835, I was requested, by Mr. Richardson of Sackville-street, to visit a gentleman in Rutland-square, under the following circumstances: he had been taking Plummer's pill for a fortnight on account of some cutaneous affection not of a specific character, and while under this treatment the weather became suddenly cold. The medicine was discontinued, but he felt chilly, and began to complain of pains in his limbs. He was directed to go into a warm bath, and remain within doors; the general pains subsided, but he complained more of his legs than before, and began to lose his rest. He remained in this state for a few days, when he began to suffer from pain in his right eye, which rapidly became worse, until, on the second day of the attack, the agony was insupportable.

I saw him on the third day, when his sufferings were so great, that although a young man of great personal courage, his spirits were quite exhausted. He had been without sleep for more than forty-eight hours, and was almost constantly walking about his room. The pain, which he referred to the ball of the eye, forehead, and temple, was of a most intense and racking kind. His tongue was coated, and he had a good deal of fever. On examination, the eye evidently projected three-quarters of an inch beyond its fellow; the lids were swollen and œdematous, and of a dusky-red colour. The swelling and dis-

coloration of the upper lid was limited above by a well-defined line, leaving about half an inch of pale skin between it and the bony margin of the orbit. The conjunctiva of the globe was protruded all round the cornea in the manner of chemosis, but its colour was not red or vascular; it had a pale, amber hue, and manifestly was distended by serous infiltration. In the midst of this swelling lay buried the cornea, perfectly transparent, and shewing the blue iris in a healthy condition. He complained of frequent flashes of light before the eye, but vision was unimpaired.

He was almost impatient with me when I inquired concerning his rheumatic pains, so little did they now engage his attention; but when his legs were exposed, it was not difficult to perceive that the coverings of both tibiæ were slightly swollen near their upper ends; and when those parts were pressed, the tenderness was found to be much greater than he expected.

There could be no hesitation in deciding on the employment of prompt and active antiphlogistic treatment, although the case presented some anomalies calculated to excite more deliberate investigation.

The pulse being full and hard, he was blooded to sixteen ounces, when he felt weak. This measure was followed by the application of a number of leeches to the temple, and under eyelid, and he was directed to take calomel and opium at intervals until its constitutional effects were produced. He felt greatly relieved by the loss of blood; but the pain returned as the evening advanced, and his night was passed in suffering.

On the third morning from the commencement of treatment the pain was decidedly relieved, and the swelling and protrusion of the eyeball diminished. His gums were now swollen and tender, and the mercurial fœtor was developed. The plan was persisted in for a week longer, with some modification. The eye had now returned to its place, and the swelling of the upper lid, as well as the chemosis, had nearly disappeared.

Now, what was the nature, and where the seat of this severe and painful disease? In the first place, it appeared evident that it was intrinsically an affection of some of the orbitar appendages, and one in which the eye itself had no participation. There was neither corneitis, sclerotitis, iritis, nor retinitis. There was no intolerance of light, the cornea was lucid, and the iris free from all traces of morbid deposit, congestion, or change of hue. The only symptom which could be mistaken for evidence of mischief within the eyeball, was the occasional flashing of light perceived by the patient; but this, we shall presently see, was owing to spasm of the orbicularis muscle, and its contractions on the protruded eye. The state of the conjunctiva was not that of chemosis from conjunctivitis. It was not vascular, and although it projected in such a manner as to give the cornea the appearance of being sunken deep in the swelling, its colour was a bright amber, and gave the idea of distention by serous infiltration from behind.

The disease then was in the cavity of the orbit; but in which of the tissues recognized by anatomists? Inflammation of the general cellular tissue of the orbit should diffuse itself equally through the cavity, and the upper portion of the superior eyelid, which corresponds to the adipose and cellular substances, should have manifested, by its colour, the vascular congestion of the interior. Again, the swelling of the lid did not extend to this upper portion, as might be expected if the general cellular tissue was infiltrated to an extent capable of dislocating the globe of the eye.

Periostitis of the orbit appeared a more rational conjecture; first, because the character of the pain, destroying the patient's rest and spirits, resembled more what is endured in severe affections of fibrous membranes in other situations; and, secondly, because it was here coincident with periostitis of the tibiæ, and succeeded to cold caught while under mercurial treatment.

One difficulty, however, presented itself to this explanation

When the upper third of the superior eyelid was pressed in such a manner that the pressure was directed backwards towards the apex of the orbit, his sufferings were greatly increased; but when it was directed upwards towards the periosteal covering of the roof of the orbit, he did not complain of pain. There was no possibility of resisting such a test as this, however probable the conjecture had been rendered by the symptoms above alluded to. It could not be periostitis of the orbit. To this, if it required confirmation, might be added the obvious consideration, that effusion beneath an inflamed fibrous membrane, situated like the periosteum of the orbit, could hardly project so much as to displace the eye, especially when we remember how many other structures are interposed, to receive and divide the compressing force.

The condition of the superior eyelid seemed to indicate that whatever structure within the orbit was inflamed, it was continuous with the palpebra, since the latter betrayed unequivocal marks of the same morbid action. But it was equally clear, that this evidence of continuity did not apply to the whole of the superior eyelid, because its superior third retained its natural colour and consistence, and was distinguished from the remainder by a tolerably well-defined line of demarcation.

Reflecting on these facts, it occurred to me that the most advantageous mode of pursuing the inquiry, as to the real seat of this remarkable disease, would be to examine carefully the anatomical constitution of the eyelid, and ascertain whether all its constituents, or only a part of them, were prolonged into the cavity of the orbit; and at the same time to determine their relations to the globe of the eye, and how far they were capable of influencing its position, or contributing to its displacement.

The result of this inquiry was far from being satisfactory at first; many parts were destroyed in dissection which were afterwards found to be important to the question at issue. Perseverance, however, and a more sparing use of the scalpel, gradually assured me of their positive existence as normal tis-

sues. Accurate drawings were made by a competent artist from the parts when recently displayed, and these, with the preparations themselves, were made the subject of a clinical lecture to the medical class of St. Vincent's Hospital, on the 29th April, 1840.

The steps of the dissection, sufficiently tedious at first, it is unnecessary to detail here. The simple mode of analysis which experience has suggested to me, will enable the reader to repeat the experiment for himself, as well as to follow me in the description of the parts which I shall now give under the heads of Anatomy of the Superior Eyelid, and Anatomy of the Tunica Vaginalis Oculi.

ANATOMY OF THE SUPERIOR EYELID—ITS CONTINUITY WITH FIBROUS TISSUES WITHIN THE ORBIT.

Having placed the eyelid on the stretch, and fixed it in this position by chain hooks, an incision should be made through the integuments, commencing at the superciliary ridge, and extending vertically downwards to the ciliary margin of the lid. In examining the successive layers, those at one side only of the line of incision should be raised, and followed into the orbit; the other half of the eyelid should be left untouched, in order to preserve a view of the section itself afterwards. Having raised the common integuments, and orbicularis muscle, with which every anatomist is familiar, the part which now presents itself is a distinct layer of fascia. When this is followed carefully upwards, it will be found to pass into the orbit, and is the first element of the eyelid which can be traced into that cavity. Within the orbit, this layer corresponds superiorly to the lachrymal gland—the vessels—and the fat which has been described as pervading every portion of the cavity, and to be in contact even with the globe of the eye. Beneath this layer, however, or among any of the tissues between it and the eyeball, no adipose substance is to be found.

The next part which presents itself in this dissection is, the levator palpebræ muscle. The mode of insertion of this muscle,

although exceedingly interesting, does not properly belong to the present inquiry. Beneath the levator palpebræ another fascia, similar to the former, is met with. This also passes into the orbit, and uniting at the edges of the levator, with that already described, seems to constitute a perfect sheath for its accommodation and support.

The part next in order is the tarsal cartilage. Tracing this upwards and backwards, we find that its thin or orbital margin is continuous with another fibrous lamina of greater strength and more remarkable appearance than those already alluded to. Following it into the orbit, it will be found to separate the superior rectus muscle from the globe of the eye, but presenting a well defined opening, through which the tendon of the muscle passes as over a pulley, to be inserted into the sclerotic coat. The external or orbitar aspect of this fibrous organ is cellular, and will scarcely prepare the anatomist for the very different appearance which it presents on its ocular surface, or that in contact with the globe of the eye. This inspection must, however, be made from the front or corneal aspect of the orbit.

Having completed the dissection of the eyelid, and shewn how much of it is a mere extension of the proper motor apparatus, it is useful for clinical purposes to consider the living eyelid, and see how far this division of the parts can be distinguished on its dermoid aspect.

In the living eyelid, when open, two portions are distinguishable, separated by a well-marked fissure, called the fold of the lid. Those two portions, it will be observed, possess different degrees of motion, and in different directions. Thus, the lower portion, or that covering the proper tarsus, and the surface of which looks upwards when the eye is open, will be remarked to move, in the act of winking, backwards and forwards, not quite horizontally, but describing a slight curve corresponding to the convexity of the eyeball. The upper division of the lid, the surface of which looks forwards when the eye is open, will, at the same time, be found to move backwards and forwards, but vertically, like a curtain, the upper margin of

which is fixed, while the lower edge being attached to the horizontal lid, follows all its movements.

When the eyelids are closed, the upper portion, or that which moves backwards and forwards vertically, will be found to constitute about one-third of the whole surface of the lid. The lower portion, or that which moves backwards and forwards nearly horizontally, will form the remaining two-thirds.

When the lids are open, at least one-half of this latter portion is usually concealed in the fold of the lid; while in certain diseases, to be just now considered, the entire of this lower portion is not only visible, but appears to constitute a more than normal proportion of the entire lid, on account of the hypertrophy and tumefaction incidental to the complaint. The pathological application of this division will, in fact, be manifest, when the reader has perceived that certain forms of disease, within the orbit, are seated either in, or internal to, the motor apparatus, and extend their effects to the lower portion of the eyelid with which they are continuous; and that certain other affections of that cavity, which reside external to the motor apparatus, or that part of the orbit next to the bone, and which contains the fat, will shew themselves by inflammation or other changes in the upper division of the eyelid.

ANATOMY OF THE TUNICA VAGINALIS OCULI, AND MUSCLES OF THE EYE.

The ordinary mode of dissecting the orbit is deceptive. The cavity is opened from above, and the dissection is made from behind forwards. The structures to which I now solicit attention, being less marked posteriorly, are overlooked; and as the examination proceeds forwards, are invariably destroyed. I have already described the external surface of the fibrous tunic which immediately invests the eye, and separates it from its muscles, as well as from every other tissue in its orbit. Its external aspect is loose and cellular, and strongly contrasted with the smooth surface which it presents to the globe of the eye.

In order to examine the latter satisfactorily, a different proceeding will be required. The inspection must now be made from the front or corneal aspect of the eye. The following is the mode which I adopt. I divide both palpebræ vertically, and turning the separated portions backwards towards the forehead and cheek respectively, fix them in this position by hooks; the conjunctiva is next divided at its angle of reflection, where it passes from the internal surface of the eyelid to the ball of the eye. The incision being made, and the edges of the divided membrane separated, the anatomist is at once struck with the inaccuracy of all former descriptions of the parts. Zinn, Soemmering, and all former anatomists, describe the ball of the eye as being cushioned on fat, and in immediate contact with its muscles. Mr. Lawrence, no inconsiderable authority on this subject, and whose opinion may be supposed to represent that of all living anatomists, speaking of the anatomy of the conjunctiva, says, "thus, this membrane is reflected from the palpebræ to the whole circumference of the globe, forming a circular fold, which, at the point of reflection, corresponds to the fat of the orbit."

Having, however, separated the divided conjunctiva, we expose, not as has been described by anatomists, a cushion of adipose tissue, but a distinct tunic of a yellowish white colour, and fibrous consistence, continuous in front with the posterior margin of the tarsal cartilage, and extending backwards to the bottom or apex of the orbit, where its consistence becomes less strongly marked. By proceeding in the manner I have mentioned, the parts are displayed without any elaborate dissection. The sharp end of a probe, or director, will be sufficient to separate the ball of the eye from the new organ, by breaking gently the fine cellular tissue which connects them. Its colour is totally different from that belonging to its external surface, and it is here perfectly smooth, where the eye glides over it in its movements. The muscular substance of the recti muscles is

no where visible, they lie on the outside of this tunic, which insulates and protects the eye in the most perfect manner.

The most beautiful portion of this mechanism, however, remains to be described. In the concavity of this tunic, and about half an inch posterior to its anterior or orbitar margin, are to be found six well-defined openings, through which the tendons of the muscles emerge in passing to their insertion in the sclerotic coat, and over which they play, as over pulleys, in their course. The tendons are loosely connected to the edges of those apertures by fine cellular tissue, which opposes no obstacle to their gliding movements. The annexed sketches from original drawings made by Mr. Neilan, in April, 1840, will illustrate the parts.

Fig. 1 represents the eyelids divided and thrown back, and the tunica vaginalis exposed by opening the conjunctiva in the situation of its fold. The tendon of the internal rectus muscle is seen passing over the pulley in the tunic to reach the sclerotic coat of the eye.

Fig. 2 shews the same preparation. The ball of the eye is drawn downwards in order to expose the superior rectus, and superior oblique muscles. The superior oblique muscle having passed through the pulley attached to the frontal bone, is con-

cealed by the tunic, from which it emerges close to the point of exit for the superior rectus.

The physiology of this tunic, which I have ventured to term the TUNICA VAGINALIS OCULI, will be conveniently considered in relation to each of its separate offices, namely, as an investment and protector of the globe of the eye, and as regulating the direction in which the muscles of the eye are to exert their force. In either of those capacities, this new and beautiful apparatus (independent of its pathological importance) appears to possess a physiological interest, entitling it to a high place among the many evidences of design, with which the animal frame abounds.

The uses of this tunic, as a covering, will be obvious from a brief consideration of the inconveniences to which, without this protection, the eye would be subjected during the action of its muscles. These muscles, it has been invariably taught, were in close contact with the globe of the eye, on their passage to their insertion, the interspaces being occupied by the fat of the orbit. This description of the parts, which is to be found in

the works of the best authors, implies, that during the frequent action of its muscles, the eye must sustain a pressure as great and as suddenly applied, as the movements of the organ are rapid and energetic. Yet this could hardly have occurred without producing some phenomena capable of exciting our attention.

Every person is familiar with the effects of a slight blow on the eye. A flash is perceived at the moment; and sometimes from a shock so slight, as when the corner of a handkerchief is blown by the wind into the eye, that I am inclined to believe, the coruscation is occasionally produced by the protective action of the orbicularis muscle alone. To this cause Sir Charles Bell attributes the flash perceived in the act of sneezing, and I think, he has succeeded in establishing his opinion.

"During the state of excitement of the respiratory organs," says Sir Charles Bell, "a very extensive consent of the muscular frame is necessary to bind together and snpport the textures, that they may bear the strain, either during violent efforts of the body, or in coughing, sneezing, &c. We may take the act of sneezing as a familiar example of the manner in which the eye is guarded during a sudden and violent act of expiration. At the moment of this convulsive action of the respiratory muscles, a violent impulse is communicated to the head, along the column of blood in the vessels of the head and neck. Every body is sensible of the eye flashing light, but the cause is mistaken, for it is supposed to be the impulse of the blood forced into the eye, whereas it is the contraction of the eyelids to counteract the force of the impulse, and to guard the delicate texture of the eye. If the eyelids be held open during the act of sneezing, no sensation of light will be experienced, because the contraction of the eyelids is prevented."*

Now, according to the received anatomy of the orbit, the globe of the eye is grasped by the recti muscles in such a man-

* Philosophical Transactions, 1832.

ner, that they must, during their action, exert upon it a sudden pressure analogous to that described by Sir Charles Bell. And when we consider, that between their origin and insertion they include the most prominent portion of the eyeball, it is obvious that the sudden swelling of their bellies during their action, (proverbially known to be as quick as thought), must have produced a flash of light, if no protective partition had existed between them. The use, then, of this tunic as a covering appears to be, to separate the eyeball from its muscles, and to protect it from pressure during their action.

As regards the second office of the tunica vaginalis oculi, and which more especially belongs to the mechanism of its openings, the following considerations naturally present themselves to the mind.

Two different functions have been assigned to the recti muscles. The one is rotation, or rolling the eye on its axis in different directions; and the other, less generally admitted, is a certain degree of retraction of the globe within the orbit. The former was recognized, rather because rotation was a fact of obvious occurrence, than because the received anatomy of the parts afforded any clue to its explanation; and the latter, or retraction, was admitted, not because it was ever actually seen to take place in the human eye, but because the supposed structure of the parts seemed to render such an action inevitable.

Certainly, if the tunica vaginalis had no existence, it would be difficult to imagine how the recti muscles could communicate the rotatory movements to the eye, without, in a greater degree, exerting a retracting power; and if more than one muscle were in action at the same time, it is manifest that the latter force must predominate. It is certain that the human eye has never been observed to have been retracted within the orbit; but why the muscles were prevented from communicating this movement, has never been hitherto explained.

Retraction is known to take place in some of the lower

classes of animals; but in them an additional muscular apparatus is provided for the purpose. The strong retractor muscle, or bundle of muscles, is inserted into the globe of the eye at its posterior part, near the entrance of the optic nerve, and cannot, therefore, exercise any injurious pressure on the organ. In certain of those animals, in which I have found the tunica vaginalis developed, the recti muscles appear to me to antagonize the proper retractor, by the passage of their tendons over the trochleæ described. This may be made obvious by pulling the retractor, and consequently the globe of the eye backwards into the orbit, when the tendons of the recti muscles will be drawn backwards along with the eyeball, and made to play freely over the pulleys in the tunic. I am inclined to believe, therefore, that in those animals the eye is brought back into its proper position, by the recti muscles, when the retractor ceases to act.

There can be no doubt, then, that the force exerted by the recti muscles of the human eye, acquires a new direction by the passage of their tendons over the trochleæ in the tunica vaginalis. They are enabled by this contrivance to act as if they arose from the sides instead of the bottom or apex of the orbit, while they possess a range or extent of motion greater than in that case could belong to them. They enjoy the extent of motion which is the property of length of fibre in muscle; while a suitable direction is given to their action by the mode in which their tendons are conducted to the eye. Many additional observations might be made in reference to the offices of these structures. Enough, however, has been advanced to show, that the received anatomy, and known functions of the parts, involved a series of physiological contradictions, which a knowledge of this new and beautiful mechanism at once reconciles and explains.

Having now revealed to me the existence of new structures in the orbit, I was better prepared to understand the phenomena of the case already described, as well as those which sub-

sequently presented themselves to my notice, and which, aided by the knowledge acquired by dissection, I have ventured to reduce to the following order:

INFLAMMATION OF THE TUNICA VAGINALIS OCULI.

In common with fibrous tissues in other situations, this tunic is subject to inflammation and its consequences. It appears also to suffer from similar constitutional causes, and to present analogous phenomena, when it becomes the seat of disease.

The case already related seems to illustrate that pathological law to which Mr. Lawrence alludes, when, speaking of rheumatic ophthalmia, he says, "when any morbid affection is the result of a peculiar constitutional disposition, there is a tendency in all the structures of the same kind, to be attacked under certain circumstances." In the case which now follows, the connexion between the affection of the orbit, and periosteal rheumatism, is more than probable.

RHEUMATIC INFLAMMATION OF THE TUNICA VAGINALIS OCULI—PROTRUSION OF THE EYE—CURE BY MERCURY.

Laurence Grant, æt. 32, a carpenter, of dark complexion, and rather strong constitution, presented himself at St. Vincent's Hospital, in February, 1838, on account of violent inflammation and protrusion of the right eye. The globe of the eye projected considerably beyond its natural situation; the cornea and iris were healthy in appearance; but vision was much confused. The conjunctiva projected remarkably around the cornea, but its colour was pale amber, and without any trace of vascularity. The eyelids were both swollen and red; the lower part of the upper lid was so much tumefied, that the ciliæ appeared to grow at an unusual distance from each other; and its transverse diameter was considerably increased. The colour of the lid was of a dusky-red, and its surface was marked by a number of distended veins. Although the swelling of the palpebra had increased its vertical diameter, and caused it to descend, the protrusion of the eyeball was so great as to cause it to be uncovered. From the

superciliary ridge to the inflamed portion of the eyelid, an interval could be seen, where neither redness nor swelling existed. This space was about half an inch broad, and extended the whole length of the lid transversely.

He complained of agonizing pain in the ball of the eye, and felt as if it were "dragged out of the socket." This latter sensation he described as never ceasing; but the pain was liable to severe exacerbations. He seemed to derive some comfort from keeping the palm of his hand pressed moderately against the whole tumour, although he could not bear the finger of another to be laid upon it. The upper portion of the superior palpebra, which was free from redness, could however bear pressure, provided it was not made suddenly, or so as to shake the whole lid, and that the pressure was directed upwards towards the roof of the orbit. When asked, he admitted that he perceived an occasional flash of light before his eye; but this appearance was more frequent in the beginning of the attack. It was now five days since the complaint commenced. He went to bed free from pain in the eye, and was disturbed about 3 o'clock in the morning. He had been unable to work for the last week from rheumatism in his knees and legs; the limbs were improving at the period af the recent attack. He had rubbed the parts affected with turpentine, but had used no internal remedy. There was still remaining slight fullness from effusion into the capsule of the left knee-joint, and tenderness with tumefaction about the middle of the right tibia.

This man had suffered severely from syphilis six years before, and had used mercury largely. He was now married, but his habits of intemperance, as regarded the use of ardent spirits, were little altered.

The temporal artery was opened, and sixteen ounces of blood removed, with relief. The improvement, however, was transient, and the pain returned almost immediately. The hospital being quite full at the time, and his lodging near, and not uncomfortable, he was allowed to take his medicine at home. Calo-

mel and opium, three grains of the former, and half a grain of the latter, were administered every third hour.

There was very little amendment until the constitutional effects of the remedy were established. This happened on the fourth day, when the disease began to give way. The pain first diminished, the eye then receded, and the redness gradually disappeared. The tumid condition of the palpebra, and the distorted appearance of the eyelashes, were the last to yield. When the disease in the orbit was removed, it was found that the tenderness and swelling of the knee and tibia were also gone.

Rheumatic Inflammation of the Tunica vaginalis Oculi; Protrusion of both Eyes consecutively; Cure by Hydriodate of Potass.

Mary Smyth, æt. 48, was admitted into Joseph's ward, April 16, 1840, on account of rheumatism, with effusion into the capsules of both knee joints. She was a fat, unwieldy person, and was rendered quite helpless by the synovitis, although enjoying tolerable health before the attack. No other joint was affected, and she was free from fever. Some degree of restlessness attended the pain; and the renal secretion was scanty and high-coloured. Fomentations were employed after the application of leeches, and colchicum administered internally. At the end of a week, and when the swelling was nearly gone, she complained of acute pain in the right eye. There was no appearance of inflammation during the first twenty-four hours, and it consequently attracted little attention, except that an active cathartic was exhibited. On the second day, the upper eyelid was inflamed and swollen, and the ball of the eye was observed to project a little; the pain was increased, and she was annoyed by occasional flashes of light before the eye. Blood was taken from the temple by cupping, and antimonials with purgatives were prescribed. She passed a wretched night suffering great agony; and the next day, the phenomena of the disease were fully developed. The eyeball projected three-

quarters of an inch; the cornea and iris were healthy, and looked brilliantly clear in the midst of a very prominent chemosis. The colour of the latter was a yellow amber, without any vascularity or redness. The lids were swollen, but did not cover the eye: the upper lid presented the dusky-red colour and tumid appearance described in the last case. The superior portion of its surface, or that next the superciliary ridge, did not participate in this change, and the two portions were separated by a very abrupt line of demarcation. Pressure on the upper division, when directed upwards towards the roof of the orbit, produced no pain. She could see as distinctly with the affected eye as with the other. The resemblance to the other cases was too striking to be overlooked; and as it was obviously not an affection of the periosteum of the orbit, and yet was connected with rheumatism, there could be little hesitation in making a diagnosis. I was desirous to know whether any other fibrous tissue was engaged, and therefore requested Mr. M'Sweeny, the gentleman who noted the case, to uncover the tibiæ. Here, although she had not noticed it to us, we found distinct swelling, and great tenderness over the left tibia, about an inch below its upper end. She then admitted that it gave her considerable pain, but her sufferings in the eye were so much greater, that she disregarded it altogether.

Being at this time satisfied, from researches* already published, of the superior efficacy of the hydriodate of potass in periostitis, I determined to trust to it alone in combating this formidable disease; but as the organ of vision was in danger, I directed that this powerful salt should be administered at shorter intervals than usual. Ten grains were given every third hour.

At visiting hour next day, she had taken seventy grains of the hydriodate. She declared herself better, and suffered much less pain, but we could not perceive much difference in the eye. On the day following, however, every person who saw her was struck with the improvement: the whole tumour was greatly

* Medical Gazette, April 10, 1840.

reduced; the ball of the eye had receded considerably; the chemosis was lessened, and the swelling as well as redness of the lids was diminished. On the fifth day from the commencement of the treatment, there was hardly any trace of the complaint, and the medicine was therefore discontinued. The tibia had now also recovered its healthy state, when, just as we congratulated ourselves on the rapid subsidence of so severe an affection, the left eye became the seat of pain, and in thirty-six hours presented all the symptoms of the disease. The same protrusion of the eyeball, the same chemosis and swelling of the palpebræ, and, as in the previous attack, the same integrity of vision and intolerance of light. The hydriodate of potass was resumed in doses of fifteen grains every third hour, with a resolve to persist in its use (if it succeeded) for some days after the disease appeared to be removed.

On the day following, I had the satisfaction to perceive that the symptoms had received a check; and in three days more, to find them altogether nearly removed. The hydriodate was continued in diminished doses, and gradually lengthened intervals, for ten days after every symptom had disappeared.

Other cases have since occurred to me, but those already detailed will, I trust, be sufficient to fix their characters on the memory of the reader.

We have already noticed the incompatibility of the diagnosis—periostitis of the orbit, or, inflammation of the cellular tissue of the orbit—with the symptoms of such cases as the foregoing. We have since, however, examined the new anatomy of the orbit. Let us inquire how far the phenomena are to be explained by reference to the structures I have described.

Protrusion of the eyeball, which, when attempted to be explained by uncomplicated periostitis, requires some stretch of imagination, appears a very simple and inevitable result of inflammation of the tunica vaginalis oculi. There are here no soft parts to receive and divide the pressure, or protect the globe. The tunic is supported by other fibrous layers on its outside, as well as by the muscles of which they constitute the

sheaths. Inflammation of this capsule must then be immediately followed by pressure; and when we recollect its conical form, and that, as happens in the case of inflammation of other fibrous tissues, effusion at once takes place into the cellular membrane connecting it to the ball of the eye, we perceive there is nothing to prevent the dislocation of the latter.

This effusion into the cellular tissue will make itself evident in another way. The conjunctiva at the place where it forms the fold, in being reflected from the eyelid to the eye, closes up the tunica vaginalis in front. At this point it will not only receive the pressure of the effused serum, but will become separated from its connexion with the sclerotic coat, by the extension of the infiltration; hence the amber-coloured chemosis without vascularity of the conjunctiva. Chemosis originating in conjunctivitis always presents, in addition to serous infiltration beneath, one or other of the forms of hyperæmia. The chemosis of which we treat is, in uncomplicated cases, the consequence of effusion from a deeper source. I can easily imagine the extension of inflammation from the fibrous structures of the lid, to its conjunctival surface, and thence to the sclerotic conjunctiva; but this complication did not occur in the cases which I have related.

The limitation of the redness and swelling to the lower two-thirds of the superior palpebra, is also a symptom inconsistent with the notion of mere periostitis, but which admits of an easy and natural explanation when the anatomy of the parts is clearly understood. The fibrous tissues of the upper eyelid, which we have traced into the orbit, belong to that portion only of the lid which is below the fold in the skin, or to its inferior two-thirds. The inflammation of the internal parts, being propagated to those portions of the lid alone, with which they are continuous, is therefore only manifested there, and thus becomes an additional aid to diagnosis. If the inflammation had possession of the general cellular tissue of the orbit, there is no reason to suppose that the upper third of the lid, which corresponds to

the part of the cavity where fat and cellular tissue most abound, should not exhibit its effects. If the disease were confined to the periosteum alone, it is, in fact, this upper portion of the palpebra which ought principally, if not solely, to give evidence of its existence.

When pressure on this uninflamed portion of the palpebra, directed upwards towards the roof of the orbit, is not productive of pain, there can be no hesitation in deciding that the periosteum of the parietes is free from the disease. Should this experiment increase the patient's suffering, it would be a reason for supposing that the mischief had extended in that direction.

In distinguishing those cases, I would not be supposed to mean, that inflammation of this tunic is a disease apart, and never combined with a similar condition of the periosteum or cellular tissue, on the one hand, or inflammation of the eyeball itself, on the other. I am aware they may exist together, for I have seen such cases. All I mean to assert is, that inflammation of the tunic described, may be the primary affection, and the point of departure from which the diseased action may spread to the other fibrous layers in the orbit, and finally reach the periosteum ; and that the attack may even be limited to the tunica vaginalis oculi—that it may here produce a train of symptoms of the most dangerous kind, and which have been hitherto supposed to reside in the periosteum, because the existence of other fibrous membranes in the cavity was not suspected. Presuming that there were no other tissues in the orbit, to which to attribute the disease, practitioners naturally referred the majority of cases to one or other of those with which they were acquainted. The solution of such cases would have been less difficult, if our clinical researches were based upon a more correct knowledge of the structures actually existing in the orbit.

ADHESION OF THE TUNICA VAGINALIS TO GLOBE OF THE EYE, FROM INFLAMMATION.

Mary Maguire, æt. 29, presented herself at St. Vincent's Hospital at the end of the fifth week from the commencement

of an attack of severe inflammation of the left eye. She described the pain she had endured as distracting, and said the eye was pushed out of its place from the beginning. She had been blooded from the arm; had leeches applied to the temples, and had taken a variety of medicines. The pain had gradually subsided, and the redness had nearly disappeared. She complained that she could not close the lids, nor move the eye, and that she could see but very indistinctly at that side.

The appearance of the parts was as follows. The eye protruded somewhat less than half an inch; the cornea was clear; the colour of the iris natural; the pupil immoveable and dilated, but regular in form. The upper eyelid was tumid and slightly œdematous; its colour was scarcely different from that of its fellow at the opposite side. When desired to look in different directions, it was observed that the affected eye was motionless. She had occasional muscæ volitantes, but no coruscation now. She was directed to take the hydriodate of potass with sarsaparilla; and continued this plan of treatment for three weeks. At the end of this time the eye had nearly regained its place, and vision was much improved; but the immobility of the organ remained.

"It sometimes happens," says Mr. M'Kenzie, in his valuable work on Diseases of the Eye, "that the cellular membrane of the orbit does not suppurate. On the subsidence of the acute symptoms, the eyeball, in such cases, is found to be deprived of its power of motion, is protruded, or has even become amaurotic from the pressure it has undergone."

From what I have observed, I am induced to believe, that the real cause of the motionless state of the eyeball in such cases, is adhesion of the globe to the tunica vaginalis, as well as consolidation of the several other fibrous layers which envelope it, and form the thecæ of the muscles. Adhesion of the tunica to the ball of the eye will, it may be supposed, be accompanied by abnormal union of the tendons of the muscles to the edges of the openings through which they pass in the natural state. The rotation

of the eye upon its axis will, of course, be impeded in proportion to the interruption to their usual gliding movements.

ABSCESS BETWEEN THE TUNIC AND GLOBE OF THE EYE.

When matter is formed in this situation, it may be distinguished from an abscess external to the fibrous tissues, by its pointing in the angle between the ball of the eye and lid. In this case the fold is obliterated, and the conjunctiva is rounded into the form of a tumour. In the following instance, it was the result of accident, and the lower portion only of the cellular tissue connecting the eye to its capsule was engaged.

A young lady, 10 years of age, was brought to me from Drogheda, in a state of great suffering from the effects of an accident which occurred six days before. Her mother stated, that while playing at hoop she fell, and the short rod of wood with which she propelled the hoop, struck her right eye ; a few leeches had been applied, but not until the third day after the fall. A smart degree of fever followed, but no delirium. The conjunctiva covering the sclerotic was highly injected, and its lower portion was projected into a swelling which occupied the angle between the eye and lid. The eye appeared more prominent and elevated than the other, and its pupil was slightly dilated. If any mark of contusion had existed, it was now lost in the general tumefaction and redness of the parts. On careful examination of the swelling, which was rendered difficult by the œdematous condition of the conjunctiva, and the great pain which manipulation produced, I found a tolerably distinct fluctuation in the most prominent part. I communicated my impression to the parents, and expressed my intention of making an immediate opening; to which they at once consented, as the child appeared exhausted by pain.

Having placed her recumbent on a sofa, and secured the head on the pillow, I passed a small straight narrow bistoury in the direction where I conceived the cyst was placed, and gave exit to about a drachm of healthy looking pus. The relief was

instantaneous; and the child's countenance at once brightened up. The aperture was maintained by a small slip of lint, and a bread poultice applied. In a few days the discharge had ceased, and the eye had regained its natural appearance.

Mr. Lawrence relates a case of abscess in the orbit, in which the matter pointed between the lower eyelid and ball of the eye. He does not mention the previous occurrence of any injury. The situation of the abscess appears, from his description, to be like that just now described, internal to the fibrous tunic, and it pointed in precisely the same place, namely, where the conjunctiva is reflected from the eyeball to the lid. The pointing in this situation will generally direct the surgeon to the proper place for his operation; but the general swelling of the parts may so far obscure this source of information, as to make a minute examination necessary. Many cases of this kind are recorded, in which the incision being made from the outside of the eyelid, a considerable depth of parts appears to have been incised before the collection of matter was reached. In such cases, it will materially assist the operator to have his attention drawn to the precise arrangement of the parts in the normal state.

TUMOURS WITHIN THE TUNICA VAGINALIS OCULI.

It will often require a good deal of discrimination to decide on the most eligible situation for making the incision for the removal of the tumours from the cavity of the orbit. The displacement of the eye, and the projection of the palpebra, will not always suggest the exact locality of the tumour. The eyelid may be thrown forward in such a manner as to make the practitioner suppose that the morbid growth lay nearer to the orbit than the eyeball, and very little covered by soft parts. If a careful examination be not premised, the external appearances may mislead him, and he may find that his incisions have to pass through a great depth of parts, to remove a tumour which actually lay in contact with the eyeball. Tumours may, in fact,

form internal or external to the capsule of the eye, and the mode of operating should be regulated by an exact knowledge of their locality with respect to this tunic.

Sarcomatous Tumour within the Tunic.

Ellen Hart, æt. 28, was admitted into St. Vincent's Hospital, complaining of severe pain in her right eye. She had perceived the swelling and irritation of the parts gradually increasing for the last eight months. The tears frequently flowed over her cheek; and the sight of the right eye was nearly lost.

The right eyeball was displaced upwards, and a little inwards, and appeared to project very slightly. The lower lid was thrown forward, and covered a firm tumour, which could be plainly felt through its substance. The distension of the lower lid gave it an hypertrophied appearance, for its ciliæ were a little more apart than usual. On drawing down the lid, the tumour could be distinguished under the conjunctiva also; and, it appeared to me, rather nearer to the conjunctival surface than to the skin on the outside. There was some œdema of the conjunctiva, which rendered this point less certain than might be otherwise expected.

Relying on the first impression it made upon me, and desirous to avoid the scar which must remain after an external incision, I made a free opening of the conjunctiva along the line of its fold between the eyeball and the lid. On clearing away the blood with a sponge the tumour was at once fairly exposed. A small double hook readily drew it forward; and a few slight touches of the scalpel detached the bulk of the tumour; but a process still remained attached to it, and passed backwards in close contact with the globe. Drawing downwards and forwards the membrane continuous with the lid, and of which I now know the real nature, this process was brought more fully into view, and easily separated from the eyeball by the sharp end of a probe.

The wound in the conjunctiva healed in a few days; and no

trace of the tumour or the operation remained. Vision was soon regained.

The tumour, when examined, proved to be of fleshy consistence, and lobulated; it was well circumscribed by cellular tissue. The process to which I have alluded, lay behind the convexity of the globe, and within the tunic, but not firmly attached to either.

Encysted tumours, it would appear, are met with internal or external to the fibrous tunic, and the operation will, of course, required to be planned accordingly. Mr. Travers, with his usual judgment, directs the attention of the practitioner to the different position of such tumours; and remarks, that "encysted tumours sometimes project exterior to the tarsus, so as to rise upon the palpebra, but more commonly beneath the tarsus, and contiguous to the globe."

The yielding nature of this latter class of tumours, and their disposition to extend themselves towards the bottom of the orbit, as well as the inconvenience of puncturing the cyst, (if its removal be the object), will render a precise knowledge of the anatomical arrangements especially necessary to the surgeon.

EXTIRPATION OF THE GLOBE.

Should extirpation be determined on, in a case where the disease was in an early stage, or should the appearances render it probable that it was confined to the globe of the eye, a very simple operation will accomplish the object.

In Mr. Travers' case, where the head symptoms were urgent, and hæmorrhagic oozings took place from a fungous protruding through the cornea, the operation succeeded in curing the patient. The morbid growth originated within the globe of the eye, and had not contaminated the optic nerve or orbitar appendages. Where both are healthy, an operation might be performed which would secure the patient against the most formidable incidents to the usual proceeding. The vessels, nerves, and muscles of the orbit might be spared by operating within the

tunic,—hæmorrhage would be avoided,—and the orbital parietes, thus retaining their covering of periosteum and cellular tissue, &c., would be guarded against inflammation, which sometimes extends into the cranium.

The comparative safety of an operation limited by this fibrous tunic is obvious, but an additional recommendation will be, the facility of its performance. The conjunctiva being freely divided, the six tendons may be snipped across with a scissors one after another, where they emerge from the tunic. The eyeball will then be easily detached by a probe or director passed freely around it; when one step alone would remain—the division of the optic nerve. When we recollect that the roof of the orbit is occasionally found to be as thin as paper in some parts, it will appear most desirable to avoid stripping it of its coverings, by operating within this second orbit, or proper fibrous socket of the eye.

The reflections suggested by a review of the cases which led to the present inquiry, as well as of this new and curious mechanism itself, may be reduced to the following propositions:

1st. That the description of anatomists, which places the globe of the eye in contact with the fat and muscles of the orbit, is erroneous.

2nd. That there exists a fibrous unic, investing and insulating the eyeball, and separating it from all the other structures in the orbit.

3rd. That the uses of this tunica vaginalis oculi are, to present a smooth surface, facilitating the movements of the eye; and by its density and tension, to protect it from the pressure incidental to the swelling of its muscles during their action.

4th. That the openings in this tunic perform the office of pulleys, giving a proper direction to the force exerted by the muscles,—securing the motions of rotation, and opposing those of retraction, which would otherwise predominate.

5th. That certain cases of disease within the orbit, accompanied by protrusion of the eyeball, are to be explained, only by

reference to the tunica vaginalis oculi, and the other fibrous tissues now described.

5th. That a correct knowledge of the anatomy of the orbit and of the fibrous structures alluded to, is essential to the operating surgeon, in dealing with abscesses and tumours, in extirpation of the eyeball, in the operation for strabismus, and all operations on that cavity.

ART. XVI.—*Case of Chronic Gastritis, simulating Hepatic Abscess.* By JAMES F. DUNCAN, A.M., M.B., Fellow of the College of Physicians, and Physician to the Hospital of the North Dublin Workhouse.

JOHN DAVIS, the subject of the following communication came under my care in the Hospital of the North Dublin Workhouse, in the latter end of February, 1841, having been transferred from the charge of my colleague, Dr. Kirkpatrick, shortly after his admission to the workhouse.

He was a young man of robust form, about 27 years of age, and a sailor by employment. He stated that he suffered from an attack of jaundice and ague three years since, in the West Indies, for which he was mercurialized, and from which he recovered. His present illness commenced eighteen months since, with pain in the right side, constipation, and rigors, for which he was treated in the Infirmary at Swansea. He subsequently came over to Dublin, and from inability to pursue his employment, was admitted an inmate of the workhouse. About seven months before I saw him, he said that he felt something give way suddenly within his right side, and that he immediately afterwards began to pass a quantity of blood, mixed with matter of a most offensive smell, by stool; which he continued to discharge at irregular intervals during the remainder of his illness. At the same period he began to discharge from his mouth a thick fluid of a dark purplish colour, and intolerably fetid smell, in appearance somewhat resembling uncoagulated

putrescent blood, and in the quantity of about half a pint at a time. There was some difficulty in ascertaining whether this discharge emanated from the lungs or the stomach, but after close cross-examination, both of the man himself and the other patients, I was led to conclude that although the discharge was preceded by a fit of coughing, yet the real expulsive effort was an act of vomiting, as we see frequently exemplified in hooping cough. The man himself insisted that it came up by coughing, but there were two circumstances that confirmed me in the view I had taken of the case, the first, that on the surface of this fluid there were always to be seen several distinct bronchitic sputa floating on the top; and the second, that after a careful examination of the chest, no adequate disease of the lungs could be detected to account for the phenomenon.

His symptoms, at the time he first came under my notice, consisted of rigors, occurring regularly every morning from 2 to 4 o'clock, accompanied with excessive pain in the region of the liver, which was so distressing as to oblige him to turn on his face in the bed, then kneeling up he pressed with both his hands upon the right hypochondrium towards the epigastrium, on doing which he felt something flow from the former towards the latter, and this was immediately followed by the discharge of matter already described. He then got relief and fell into a sound sleep, accompanied by a slight perspiration. He slept badly, could scarcely rest on the right side; his aspect was icteroid; appetite good; thirst considerable; bowels regular; tongue clean; pulse 96; urine natural in colour.

On external examination the right hypochondrium appeared somewhat enlarged, particularly over a space about three inches in diameter; there was an obvious depression between this space and the inferior extremity of the ribs on that side, and the margin of the liver could be felt rather lower down than the tumour; the whole of the space was exceedingly sensitive to pressure, particularly the tumour, which had a doughy feel, but afforded no evidence of fluctuation. The intercostal spaces were

distinct, and percussion down to the termination of the thorax was quite clear. Respiration was natural throughout, with the exception of some slight bronchial râles near the base of the right lung. He was generally exceedingly restless and never satisfied, and seemed of a peculiarly fretful disposition.

I do not intend to pursue the history of this case farther than to state, that up to the 7th of April there was but little alteration in his symptoms; at first, and occasionally afterwards, he experienced considerable relief, which was, unhappily, but temporary; he was also attacked with diarrhœa and passing of blood by stool, which continued some days.

At the date referred to, he became deeply jaundiced, and suffered a great aggravation in all his symptoms; he was exceedingly restless, and complained much of debility, as he was unable to retain any food upon his stomach. His pain was so great as to disturb the other patients in the ward. His cough became more troublesome, and he referred the seat of pain to the region of the epigastrium near the heart. As I had frequently seen him suffering nearly as much before without any perceptible cause for his distress, my attention was not sufficiently attracted to the incipient inflammation of the left lung and pleura, which I have now no doubt commenced at this period, although the pneumonic symptoms did not become so distinct as to attract attention for two or three days afterwards; the whole of the left lung was then found completely hepatised, and the disease so far advanced as to resist every effort to remove it. He died early on the morning of the 13th April, and the following appearances were presented on dissection.

I am indebted to the kindness of Mr. Babazon for having made the *post mortem* examination.

The right lung was of uncommon size, emphysematous throughout; no adhesion or effusion on that side. On the left the lung was adherent and covered with lymph of a yellow colour. The liver was rather large and pale; the gall bladder fully

distended; the stomach exceedingly large; spleen perfectly healthy; all the structures tinged yellow.

The left lung was with difficulty removed, as lymph was thickly deposited both on the costal and pleural surfaces. Towards the back and inferior part, the lung was very brittle, the finger easily passing through it, and with little force. The colour in this part was dark brown, and but little fluid escaped on its being cut. Up to the apex the lung was solid, dense, and of considerable firmness; on making an incision into this part, the surface presented the appearance of the third stage of pneumonia, and a bloody purulent fluid could be easily scraped from them by the scalpel. The heart and pericardium presented no unnatural appearance.

No abscess could be detected in the liver, which was pale, the yellow structure predominating but of a natural consistence. The pyloric end of the stomach, and lesser curvature throughout, presented a dark-brown tint, intermixed with reddish spots, the other parts were of a greenish-yellow; the mucous membrane was much thickened and softened. The ducts of the gall bladder were pervious, but the mucous membrane of the duodenum into which they opened was inflamed. The round defined tumour in the right hypochondrium consisted merely of a bundle of the rectus muscle.

I have thought this case worthy of being recorded, from the striking discordance between the appearances after death, and the symptoms observed during life, and which had led every person who saw the case to expect to find an abscess of the liver which had burst internally. The man himself was so clear in his statement, and persisted so positively in repeating it, that I had little hesitation in forming such an opinion, especially when I saw so many evidences to support it. The fixed pain in his right side, the existence of rigors at irregular intervals, (for independently of the morning attack, he stated that they frequently came on at other periods in the day), the sudden giving way in the part followed by a discharge of mat-

ter by stool, all looked so exceedingly like such an occurrence, as scarcely to require any additional corroboration, except the absence of contradictory symptoms. In addition to which, there was the positive discharge, daily, of an unhealthy matter of a very offensive odour, and in such quantity at a time as was consistent with such a supposition, coupled with the very peculiar mode of its evacuation, and the sensible relief that attended it, which altogether presented as strong a presumptive proof as could well be conceived in favour of the hypothesis. And yet the whole mass of symptoms was caused by a very severe form of chronic gastritis. As to the treatmeut adopted, I shall merely say it was palliative throughout: leeches to the seat of pain followed by poultices; quinine and various forms of bark, and opium in large and repeated doses; each of these measures seemed to give temporary relief, particularly the last, which never produced the slightest narcotism. It is doubtful whether any treatment would have had the least efficacy in curing so inveterate a form of disease.

It is interesting to observe how distinctly the symptoms of ague were produced by this affection of the mucous membrane of the stomach, independently of any disease of the liver or spleen. I am induced to attribute it to the diseased state of the stomach, rather than to that of the liver, because I conceive the anological form of intermittent, produced by a diseased condition of the mucous membrane of the bladder justifies the preference.

As to the disease which ultimately carried him off, I think it is worth while to notice the occurrence of such a severe attack of pleuro-pneumony, without any apparently exciting cause; its insidious commencement, its rapid progress, its confinement to one lung exclusively, and the degree of disorganization which was produced in so short a time.

Although abscess of the liver has been met with sufficiently often, even in these climates, to justify the physician in his expectations of finding it occasionally, yet it cannot be denied

that it has often been diagnosed where subsequent investigation did not corroborate the opinion. I recollect a case of this kind which occurred in the practice of the late Dr. Crampton, when I was clinical clerk at the Whitworth Hospital, where the supposed abscess was discovered after death to be nothing but the distended gall bladder which had projected beyond the inferior margin of the liver, and was rendered more prominent by the thinness of the abdominal parietes; and another case is recorded in the Dublin Hospital Reports, where this viscus, under similar circumstances, was actually opened in mistake for an abscess.

The absence of fluctuation in Davis' case, did not seem sufficient to prove that our conjecture was incorrect, because it was supposed to deep-seated, if it existed at all, and so to be unfavourably circumstanced for yielding satisfactory evidence to the sense of touch.

Art. XVII.—*Researches on the Diagnosis of Hernia.* By P. J. Murphy, Esq., M.D., Liverpool.

The diagnosis of strangulated hernia is sometimes very obscure. In many persons, especially females, the hernia has escaped detection, and either death or artificial anus has been the result, while, occasionally, its phenomena have been so accurately imitated by other disease, that unnecessary operations have been performed by surgeons of acknowledged merit.

RUPTURED INTESTINE AND EFFUSION INTO THE HERNIAL SAC.

1837. Isaac Benson, æt. 35 years. Abdomen exceedingly distended and painful in every part to the most trifling pressure; incessant vomiting of yellow inodorous matter; bowels constipated for the last three days. Hiccough; an irreducible painless tumour occupies the left inguinal region in the usual

site of hernia. On pressure, its volume is slightly diminished, the diminution being attended with a gurgling noise, on assuming the erect position, the tumour fills apparently with a fluid, which, on being returned, cannot again distend the tumour, provided strong pressure be made. It covers the spermatic chord. Countenance expressive of great anxiety; thirst; skin cool and clammy; pulse 130, thready; respiration 48; feet cold.

Three days since fell on his abdomen, from a height of a few feet, and, in about four hours afterwards, the symptoms commenced which have been gradually increasing. Denies that he has ever been subject to hernia.

Vs. ad ℥xii. Pulv. Opii gr. iii. c. Calomel. gr. vi. Foment.

Three hours afterwards I again visited him, accompanied by two medical gentlemen.

The blood was much buffed and cupped; pulse 140, and scarcely to be felt; face pale; tongue white, moist, and cold; intellect at present clear, but it has been confused during my absence. Abdomen less painful; has passed urine; syncope in the erect position. His friends, who are very anxious for his safety, begged that no possible mode of relief should be withheld. The operation for hernia was decided upon, we having first intimated to his family, that it alone presented any chance of recovery, that the danger would not be increased by it, but that he might sink before its completion. We were repeatedly assured both by himself and his wife that he had never laboured under rupture, and that the tumour was not in existence previously to the fall, and that it had appeared since.

An incision having been made through the integuments, fasciæ, and cremaster muscle, there were presented to our view all the appearances of an old and empty hernial sac. On pressing the abdomen with the hand, and slightly elevating the body, it became distended apparently with air and fluid, and was again emptied by a very slight pressure on the tumour. The walls

of the tumour were nearly half an inch thick, and the inner surface glided as is usual in a hernial sac. His friends and himself were again questioned as to the existence of a tumour previously to the accident, but their answers were positive as to its recent appearance. The case was now more obscure, but we were satisfied that no strangulation existed. The tumour was now separated from its attachments, which were cellular, dissected off the spermatic chord, and its neck traced to the external or superficial inguinal ring. The inguinal canal was opened for a few lines with a bistoury, and the parts being brought together by adhesive plaster and bandages, no other remedy was proposed. He died in four hours afterwards, and his body was examined on the following morning by order of the coroner.

The peritoneum of the intestines and abdominal walls displayed the usual signs of inflammation.

When opened a large quantity of fetid gas escaped, and the cavity contained, besides sero-purulent fluid, a large quantity of fæcal matter. A perforation was sought for and found in the hypogastric region. The lower portion of the ileum was the intestine injured. It was evidently a laceration about one inch in length, and one-fourth in breadth, situated on its anterior portion, and in its transverse diameter. The edges were jagged; the openings of the serous and mucous coats corresponded in size, and the neighbouring portion of mucous membrane was perfectly healthy. The tumour was an old hernial sac; no marks of external injury either opposite the laceration, or over the sac could be detected.

This man met with his death unfairly, and our difficulty in not arriving at a correct diagnosis, arose from our giving credence to his statement in direct opposition to our medical and pathological knowledge. I mistook the disease for direct inguinal hernia, and even when operating, thought the tumour might be a portion of large intestine, thickened by inflammation. The true nature of the disease was laceration of the ileum from in-

jury, but whether the injury was received while the intestine was in the sac, or general cavity of the abdomen, could not be determined.

CONGENITAL HERNIA AND ULCERATION OF THE APPENDIX VERMIFORMIS.

February 10th, 1835. John Hignett, æt. 2 years. Four hours since commenced screaming, and complaining of pain in the abdomen. The whole of the abdomen is swollen, tympanitic, and exquisitely tender. Congenital hernia of right side; but at present there is no intestine in the scrotum. A small, firm, and round tumour occupies the external ring, it is anterior to the chord, and at first it was supposed to be a blighted testicle; on examination, however, both testicles are in situ, and there is hydrocele of the right tunica vaginalis. The fluid of the hydrocele, when compressed, ascends as high as the tumour, but cannot be made to return into the abdominal cavity. The medical attendant is positive as to the previous existence of hernia. An attempt was made by the taxis, and next by compressing the fluid, to return the supposed intestine, but failed. The warm bath was next tried, during which time the taxis was repeated. Ice in a bladder was then applied to the tumour for the space of an hour. Not succeeding, the operation was proposed, acceded to, and another opinion sought for. On removing the taxis, the tumour receded, but without any apparent relief, and the fluid of the tunica vaginalis passed into the cavity of the abdomen. Enemata, hot fomentations, laudanum, and one drop of prussic acid were prescribed. When visited two hours afterwards, the symptoms were increased. The pulse was detected with difficulty; extremities, tongue, and breath cold; tossing of the arms; film on the cornea; refuses drink. He died sixteen hours after the symptoms were first noticed.

Examination.—The tunica vaginalis was distended, and, on being opened, a fluid of a muddy appearance, mixed with shreds

of coagulable lymph, escaped. Fetid gas was also noticed. The serous membrane showed no mark of vascularity, and communicated with the peritonæum. The upper portion of the canal was slightly adherent, but a gum elastic catheter passed readily into the abdomen, and a large quantity of gas was thus removed; the abdomen immediately diminished in volume. These symptoms pointed out a perforation of the intestine. The peritonæal coat of the large and small intestines, bladder and stomach, was very much inflamed, yet the adhesions were few and slight. Feculent matter was found in the hypogastric region, in the right iliac fossa, and in the pelvis. After a long search, the perforation was found by pouring water into the stomach with the catheter, in the free extremity of the appendix vermiformis. The tumour was supposed to be a portion of feculent matter until one of the spectators pointed out a substance which proved to be a small cherry stone. The orifice of the ulcer was very small. The explanation of this very obscure case was now satisfactory, and it requires no comments. It may be worth remarking, that I nave never known a child under four years of age, recover of any complaint attended with cold breath, and a failure of the pulse.

TESTICLE RETRACTED TO THE ABDOMINAL RING.

August 20, 1838. A foreign gentleman, æt. 30, was suddenly seized with the following symptoms: an excruciating pain in the right groin, increased on the slightest motion of the corresponding lower extremity; a tumour larger than a marble, and sensible to the slightest pressure, is found at the external ring; no impulse is communicated to it by coughing; the testis is absent from the scrotum, a circumstance before noticed.

He is subject to this attack five or six times in the year; the pain continues from ten minutes to an hour, and then suddenly subsides, leaving him perfectly well. When the pain is more severe than usual there is vomiting.

A large dose of laudanum was prescribed, and an exhausted

cupping-glass applied over the tumour. The pain ceased in a few minutes, after having continued more than twenty. When the cupping-glass was removed he walked about; the testicle had descended, and the chord, which was larger and softer than usual, felt as if it was varicose, but could not be lessened by pressure either upwards or downwards. A very eminent surgeon considered it hernia; but he had never seen him during the attack. My impression of the disease was, that the testicle was attached to the omentum, by which it was occasionally retracted to the orifice of the ring. A nicely fitted truss was applied over the external ring. Fifteen months have now elapsed without a return of pain. I have a distinct recollection of having read of a similar case, and the sufferer, I think, was the celebrated Zimmerman. If the truss failed in warding off these attacks, he gave his consent to permit me to cut down on the chord and divide the omentum, or even the chord, should I deem it necessary.

STRANGULATED HERNIA.

Sept. 22, 1837. A married female, æt. 45, the mother of several children, had femoral hernia of the left side for three days. The *taxis* was persevered in so long and so rudely, that the most trifling handling of the part could not be borne. When operating, there was so much confusion about the anatomy of the parts, owing to their being agglutinated by lymph, that a layer was raised with the supposition of its being the hernial sac, as fluid was detected beneath, and the internal surface glided on itself, when the membrane was pinched between the finger and thumb; on dividing it, a thin, brown fluid, similar in colour to the contents of the intestinal canal, appeared. We supposed that the intestine had been ruptured by the taxis, and it was proposed to enlarge the incision, and leave the case to nature. However, I continued my dissection very cautiously, and on cutting the part freely, it was evident that even the sac was as yet unopened, and that the fluid was the product of inflammation, tinged with the colouring matter of bile, as she was

suffering from jaundice, which, until that moment, was not observed. The sac contained a deeply-coloured yellow serum, with a knuckle of small intestine. It required the greatest care to divide the stricture safely, so closely was the intestine girded; and when drawn out, it was so deeply indented in two places, that it was dreaded that the structure was injured. It was drawn through the fingers several times before it was returned into the abdomen. Recovery took place without any troublesome symptom, excepting the suppuration of the disturbed parts. The hernia has not since descended; and she follows an active occupation without the use of a truss.

May 1, 1840. Mrs. M——, æt. 62. Obstinate constipation for eight days; constant vomiting. The matter vomited is similar to fæces both in colour and smell. Abdomen free from the slightest swelling or pain; slight hiccup; pulse 80; countenance natural; thirst; skin cool; no appetite; intellect clear; cramp of anterior part of right thigh; a small, hard, moveable tumour in the femoral ring. I was asked to operate, but refused, as the tumour did not give me the idea of hernia.

Has had usually a relaxed state of bowels; but two years since had constipation for four days, attended with abdominal pain, which yielded to bleeding.

Olei Crotoni gutta cum Ext. Col. Co. gr. v. tertiis horis. Inject cold water until the bowels are distended.

10 o'clock, P. M. Three pills have been taken, and two quarts of water injected.

May 2nd. No relief; passes water. She was placed on the floor, and cold water poured on the abdomen from a height for one hour.

Hydr. Submur. g. ii. omni hora.

3rd. Pulse 96, weak: she is desponding.

Hydrargyri Vivi. ℥ iv. Pulv. Opii. gr. ii.

4th. No change.

Cont. Medicamenta.

5th. *Mane.*

Hydr. Vivi. ℥ ii.

Vespere. Eight natural stools; pulse 100; vomiting ceased; abdomen quite flat. She gradually recovered without any other symptom worth recording. I know not the cause of the constipation here, unless it was intussusceptio. There was no hernia, no inflammation, no fæces in the colon. The enemata of cold water were prescribed, lest there should have been a lodgment in the caput coli, and in order that a powerful and safe remedy should not be omitted in so desperate a case; but my opinion was, that the obstruction was in the small intestines beyond the reach of the fluid. Independently of the abdomen being free from pain and swelling, I think we may safely conclude, that where we have fæcal vomiting, we have very trifling peritonitis, for as the effect of peritonitis is to check the action of the intestines, as long as this action continues we may conclude there is no peritonitis. Fæcal vomiting has been absent in one case of omental hernia which became strangulated, and terminated fatally; also in two cases of stricture of the rectum. These cases I have just witnessed. I am inclined, therefore, to look upon fæcal vomiting as a symptom solely depending on mechanical obstruction of the small intestines. A few days since I saw a person suffering from peritonitis, which was supposed to be the effect of hernia; but before I saw him, I ventured to assure his surgeon that it could not be hernia, as there was no fæcal vomiting. There might be an omental hernia without fæcal vomiting, but its symptoms are seldom so severe as to produce peritonitis in a few days.

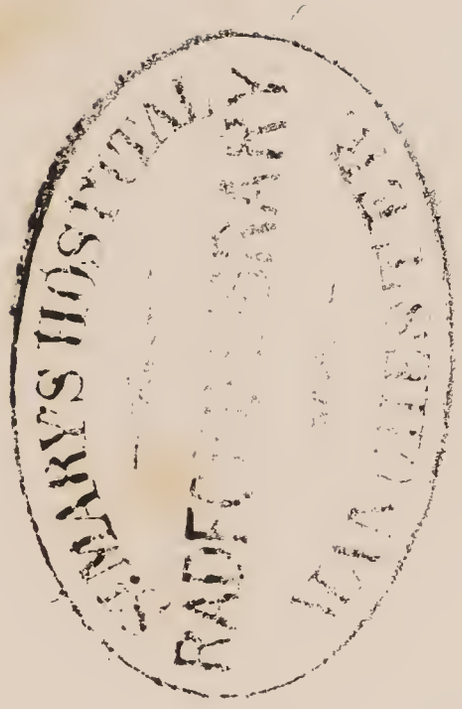

MARY'S HOSPITAL

Fig. 1.

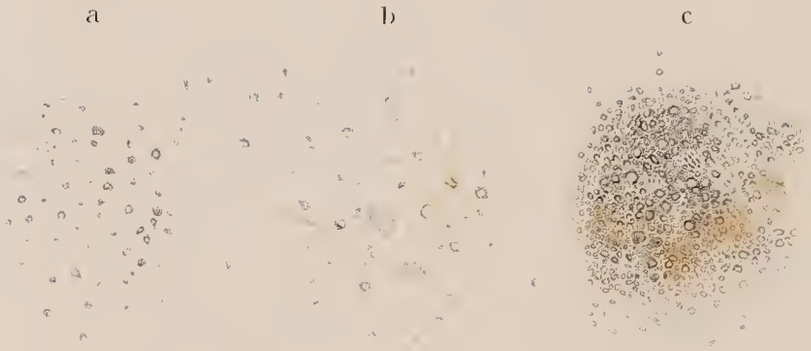


Fig. 2.

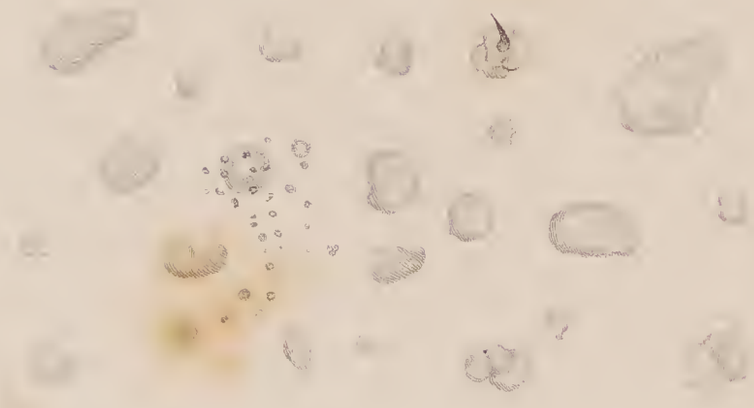
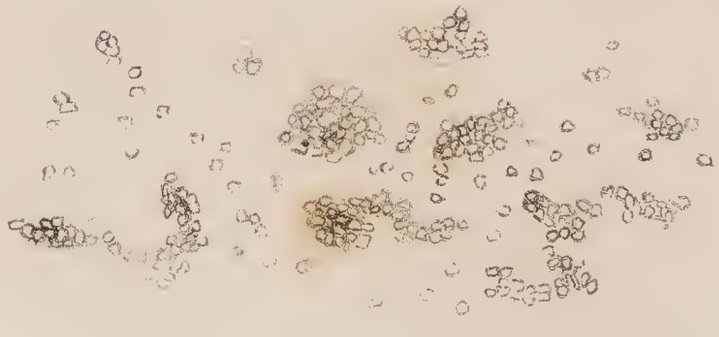


Fig. 3.



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Art. XVIII.—*Remarks on the Uses of the Globules in Relation to Absorption, Secretion, and Morbid Deposition.* By Thomas Hodgson Watts, M.D.

[Continued from No. LVI. p. 270.]

The globules seen on observing tubercle by the microscope will now occupy our attention. We will endeavour to place the complex forms which we detect in it, in such a manner as to make their various distinctions appear proper to the several modifications of the morbid product. It is, perhaps, just to hope, that our observations may help to quell some contests of opinion regarding tubercle, which have been too common in all times; and they may possibly add new zest to the inquiries of the physician on an object so mournfully interesting to mankind. However, we are sensible of the difficulty in determining upon the specific character of microscopic forms seen in the tissues of the body, where so many influences are at work after life has ended; and we will accompany the special relation of appearances with our reasonable doubts.

The grey granulation of the lungs, separated carefully from all surrounding tissue, and pressed between two plates of glass, so as to bruise it completely, mixing the softer parts with the fluid, this latter presents to the view a granular appearance, whilst the rest of the body lies between the glasses, like a greyish-white mass. Innumerable corpuscules are suspended in the water, giving it the aspect of being full of dark points; but on bringing any of those points slightly into the focus, they seem bright silvery white, somewhat transparent, bodies of the most minute globular coinage. The great mass of them, however, give the stream a dark look, owing probably to their different relations to the focus. (See Plate, *fig.* 1, *a.*) The whiter and softer form of the grey granulation, when treated in the same way, affords also these corpuscules, together with some few small globules, like transparent bodies of a greyish hue, or about the colour of the fluid they swim in. This constitutes a sort

of transition to the appearance presented by the yellow tubercle. (See PLATE, *fig.* 1, *b.*)

We have found the grey granulations of the spleen in scrofulous children, affording the same appearances, with the exception of the more recent and transparent, almost colourless ones, which appeared, after compression, alike to a very plastic, pliant, and compressible matter, more or less translucent, of a somewhat granular surface seen through the microscope, but grey and smooth as mucus viewed with the bare eye. Still a solitary corpuscule was here and there observable; and by moistening such granulations with liquid ammonia before compressing them the plasticity was exchanged for streams of innumerable corpuscules. If we do not separate the granulations carefully from surrounding tissue, and bathe them well in distilled water, we may also have abundance of blood globules in addition thereto. (See PLATE, *fig.* 1, *c.*)

The yellow tubercle of the lung, compressed together with a little distilled water, in the same manner as described for the grey granulation, mingles in the liquid, besides a great quantity of the corpuscules, already alluded to, also innumerable globules or transparent globular bodies, very nearly of the colour of the fluid they swim in; or warmish grey, or tinged lightly with yellow. They vary much and widely in volume, but there is a medium which is the general size. They may be seen at times almost as small as the more remarkable corpuscules, or large as the pus globules, and even considerably larger still. The great bulk of them, however, extend from the size of the blood globules, to that of a laburnum seed. Their form is inconstant or varied, but they tend always more or less to approach the spherical, although they very often are merely rounded, and in some degree flattened. They possess a considerable degree of elasticity, resembling that of a solid body. When casually covered with corpuscules, they become proportionably less transparent, and form grey globules bearing some resemblance to pus; but this appearance is lost in the stream.

They are also often united one to another, forming composite globules, or irregular masses of various volumes, but as perfectly transparent as any one of them taken singly. However, the intensity of colour is somewhat enhanced by this composition, and it may even approach the aspect of amber. (See PLATE, *fig.* 2.)

The pultaceous chalky white matter encysted in tubercular lungs, pressed between the plates of glass, has presented to us one mass of small globules of an almost uniform size, although containing others smaller and larger than the medium. They range from the volume of the largest corpuscules almost to that of the seed of the turnip. They are transparent, with a well-marked margin, and never appear to unite in any number into a composite globule of a larger dimension. They sail in streams among themselves when the glass is compressed, so as to put them in quick motion ; and they seem to have no remarkable attraction of adhesion to one another. The compact globules at rest have a shade of sienna colour, which is the more remarkable, as the mass appears white on the glasses to the naked eye. (See PLATE, *fig.* 3.)

We will now subjoin such considerations concerning the essential character of those minute bodies visible in tubercle by means of the microscope, which naturally present themselves to the mind at first sight. Here the question arises, are they properly tubercle and the elementary forms it assumes? We confess ourselves not to be quite decided on every bearing of this query, and we will develope our doubts a little.

Regarding the minute corpuscules, and small, silvery, spherical globules of the grey granulation, and of chalky white pultaceous matter, and also in some measure of the yellow tubercle, we must either allow them to be the primitive forms of tubercle, or as common to this and some other morbid formations, or else, look upon them as infusories of a highly animalized fluid. There is much which argues in favour of either supposition, but we incline more and more daily to draw in suspicion their mere tubercular character. We find them, in the first place, in the

tubercle taken from the corpse; and it might very well be urged that they may be the products of the animal liquids in the dead body. We see them also, or others most similar to them, in purulent expectoration, and it may be fitly foreseen, the probability of their being common to liquid animal matter, as well such as is found in tubercle as in pus, under a series of circumstances, if not also elsewhere. They are, however, most numerous in the sputa of far advanced phthisis. We have also observed bodies very much alike to them in the white, semi-lucent, spherical carcinoma of the liver, but they are so minute, that if there are differences of structure they have remained unperceived by us. But again, they are not absolutely the product of the dead body, since we have observed them equally, or even more plentifully, in the matter taken during life from softening tubercle of the glands of the axilla with the forceps, which we examined after a very short interval.

If, however, the accidental nature of the corpuscules and minute spherical globules be denied, one of two things must then be allowed: either that they are the minutest states of the true tubercle globules, or else one of a series of appearances that the matter of tubercle puts on. But there is a marked difference of character between them and the gum-like globule of yellow tubercle; and we have not seldom seen the latter possessing the entire of their peculiarities, when even as small as the most grown of the spherical forms spoken of. We have not been able to satisfy ourselves upon the authority of experience hitherto, so as to induce us to adopt the one or other of these for an invariable opinion; and we will leave it to time and ingenuity to unveil these mysteries of observation.

The warm grey or yellow bodies seen in and composing almost the whole substance of yellow tubercle, seem to us to be the more characteristic elementary form of the matter of scrofula. Resembling in some degree the colour and volume of blood globules, a suspicion of their being such, in a modified condition, struck us momentarily; but upon testing them with suitable re-agents we

soon satisfied ourselves of their specific kind. The globules of the blood are instantaneously dissolved by distilled water; but the globules of yellow tubercle are not changed at all thereby; besides these are not soluble by boiling tubercle in a test tube of water over a spirit lamp.

The ultimate constitution of these bodies is difficult to decide upon; and as far as sight and motion, and their individual contact point out to us, they must either be somewhat fluid saccular or else solid globules. The irregularity of their forms in the firmer tubercle of the lung would decidedly incline the observer to look upon them as consistent matter of definite volumes, and more or less globular in form; and the nearest analogy we could give of their aspect would be to compare them to rounded tears of gum arabic somewhat softened in water, and swimming in a liquid of nearly equal specific gravity. This would represent their irregular and softened margin under the microscope, and still better the colour and transparency of them, which only admits of good description by comparison with things perfectly familiar to the naked eye.

These globules, however, as they appear in the softer tubercle of the spleen and of the glands of the lymphatic system, and also in the riper form of this matter in the lungs, would seem to have a finer constitution, are fuller and more regularly spherical, and liken secular globules more completely. They seem to vary something in colour and rotundity of form in different specimens, just as the tuberculous matter itself wears a varied appearance to simple vision. But, under all circumstances, they retain marks of peculiarity more than sufficient to point them out as tubercular. Thus, it has been hitherto impossible for us to determine whether they are a species of solid globular crystallizations of an animal matter, or saccular globules enclosing a more fluid material. We doubt either of these opinions taken exclusively, but suspect sometimes both views are in part correct, inclining, however, to consider the evidence for their solidity as, in comparison, more satisfactory.

We have employed an instrument of Vincent Chevalier with selected lenses, and have made our observations with the reflected light on the simple mirror. The magnifying power which we have found most convenient is five hundred or thereabout; and we have described the appearances as they fell under our view thus enlarged. It seems well to notice these circumstances, because of the difference of microscopes, and the deceptions that might possibly arise from the application of a variety of powers of enlargement and styles of illumination.

Tubercle is, in our opinion, truly meant for existence out of the current of the circulation, as a product of abnormal vitality, and the morbid alteration of the capillary affinities, wherever it is formed from the elements of blood in the scrofulous cachexia. We will not deny, however, that the circulating mass does actually partake of the ill habit of tubercle in some fashion; on the contrary, we desire to think so; but confess total inability to detect in it any other signs of primary change, than the frequency of preceding pallidness common to the cachectic, and allied to diminution in number of the blood globules. If such alteration in the constitution of the blood is a sequel of chemical change, and the presence of certain salts or bases, disproportionate to the conditions of health, must remain a question for the chemist to solve, as it concerns proportions and not vital forms. Discoveries of this kind are perhaps needed to fill up the train of causation in the phenomena of tuberculization; but we would not lay too much weight on the value of such anticipations, as the grand problem will still remain for solution, concerning the originating causes of such changes, and also the mass of their accompanying phenomena, and not of a few only. It may be urged, that tubercle might be readily expelled from the blood fully formed; but there is a fallacy in this kind of argument, which assumes the prior existence of it in form amid the constituents of the mass in circulation, where it is only found by accident in the advanced stages of the disease, and as the probable sequel of a local morbid process. It is difficult

also to suppose its regular separation in this manner, so constant and perfect as to evacuate it completely from the vascular system, without more marked embarrassment of function than commonly attends tubercular affections. Besides the analogy of the matters of physiological secretion opposes strongly such a supposition, which we consider untenable, until we have satisfactory proof of its presence in the circulating fluid at every period of the cachexia. But the fact is otherwise; and it has been found but seldom in the system of blood-vessels, and under circumstances altogether different from those which are requisite to establish its necessary pre-existence in the blood. Therefore, in regard to the primary site of tubercle, we will endeavour to arrange in suitable order a few principle facts relating to its development.

It is tangible to observation, first of all as a product of secretion, whether on secreting surfaces, or in the cellular structures of tissues, or in the parenchyma of organs in the pathological state.

The vital affinities of the capillaries in the parts where tubercle is to be voided from the circulation, compose it in the quality of embryonal liquor, by the accumulation of its elements from the blood.

It is therewith separated, for the most part, out of the vascular system by a process of secretion, to which the accumulative affinities of the capillaries, membranous imbibition, the impulsion of the circulation, and the assumption of the form of tubercle externally, contribute respectively, in an analogous manner, as happens in the secretions of health.

It is more than probable, however, that another condition of the capillaries obtains in tubercular secretion, distinct from that of the physiological state, which may contribute greatly to the deposition of the morbid matter.

We do not desire, however, to invalidate in the least, by those principles, the value of the observations of several great masters in morbid anatomy, that have detected tubercles within

the vascular system. It seems to us only, that conclusions not strictly logical have been deduced from this circumstance. Notwithstanding, therefore, the primary intention of the economy appears to be, to bestow on tubercle every essential for existence out of the circulation, whether for immediate excretion, or after an interval; yet we acknowledge the truth of the following propositions, respecting its occasional appearance in the absorbent and circulating systems.

It has been found not seldom filling completely the veinules in the exact neighbourhood of tuberculous ulcerations.

It has been sometimes discovered, but rarely, as a plug in some considerable vein in communication with parts already tuberculized. But this is not enough to justify the conclusion as to its formal presence ordinarily in the blood. It might form, in such cases, in a kind of coagula, when the tuberculizing process combines with and succeeds to a transient phlogosis, or else it may follow upon the coagulation of the blood in a vein from whatever cause.

It is sometimes found in the simple coagula of the heart and large vessels in the last event of the malady. Again, this may proceed from more than one source. In such circumstances, it may have gained the general circulation either, possibly, from a tubercle of a vein, or by an open vessel in a tubercular mass; or else, what is most probable, the embryon in liquor may have mingled with the circulating fluids, whilst its accumulation by the tuberculizing affinities of the capillaries was very considerable in certain localities, and the secretion of it outwards not proportionably complete; as may happen in particular in strongly predominant tubercular cachexia, with much local disorganization.

In this case, it may collect apart in the coagula, just as in coagulable lymph, and secreted matters external to the vessels.

It is also observed not seldom in the lymphatics which lead from a tubercular gland; there are two probable sources whereby

it might gain access to this site, either through the open mouths of vessels already broken into by the destruction of the texture of the gland itself, or else it may be taken up by the process of absorption in place of normal matter.

We have ascribed one of the principal agents in the local deposition of tubercle to a change in the vital affinities of the capillaries; those manipulators of the raw material of the blood into so many forms, which are subject still to modifications by disordered health and diseases. It appears to us highly proper to uphold the exclusive and special characters of the tuberculizing affinities, because we can obtain little of what is satisfactory, in referring them to derangements of one or other of the kinds normal with health. The subject is, however, not uninteresting as a matter of simple speculation; for it is difficult to conceive a special institution of forces to destroy untimely the animal frame, where so many are designed for its preservation and growth. We gain nothing, however, in looking at the tuberculizing affinities, as being a modification of those of plasticity forming coagulable lymph; yet there are considerations which remove it out of the limit of absurdity to think so. Tubercle is very durable, whilst it is far less so than the material of plasticity. Organized lymph assumes a vascular and reproductive life, although still subject to gradual waste in comparison to primary tissues. The attachment of tubercle to mucous surfaces, and inflammatory growth everywhere, also seems to hint toward some such irregular application of normal forces otherwise designed for the purposes of healthful operations. Besides there are men and families of our kind, free from the taint of tubercle, and almost certain to remain so by obeying the laws of prevention dictated by experience; and how could this be, it might be argued, were there a special creation of tuberculizing affinities, as their operation ought then to be general? But this would be cavilling the word, for we only wish to consider the changes of vitality in the capilla-

ries, as special by their product in tuberculization, avoiding the suspicion of any particular institution of forces for so dire an end. The establishment of the question on this basis, seems to us only of weight in respect to the general question of the prevention, eradication, and curability of the disease; but, even in this, common observation will serve us better than the most hopeful opinion. Thus, the malady may be acquired by an ill or unwise course of life, or a helpless subjection to morbid influences; and it may become ever after hereditary from parent to offspring. The bare facts, as they stand, admit of the conclusion, that there are due conditions, which if mankind could accept, they might escape this unnatural scourge. Noble devotion to celibacy in the tainted; comfort and temperance in life; well-appointed labour and exercise; and the avoidance to the utmost of the external causes of disease; are the prescription of the pathologist prophylactic against tubercle. But can such provisions ever be fulfilled? The lawgiver has never felt for centuries the need of a strong, hardy, unailing people; men are of secondary value to him, as a ruler of vast dominions, and he dreams no more of corporeal excellence. The priest is powerless on this point, and religion is silent. Society, as a whole, never made half the sacrifices to luxury it does now; nor were ever its strifes and toilings more persistent; its vices and sufferings seem to compete. The answer to such query, the long far story of the future alone can give.

Any analogy between tubercle in its broad features, and those of mucous secretions destined for the lubrication of surfaces, does not render account for the frequent occurrence of it in the air passages and alimentary canal. Besides the manner of change whereby the cachexia alters the vital affinities of localities, so as to make them separate the genal tubercle from the matter in circulation, is beyond the range of human explanation; and all we can do in our inquiries into its origin is to remark the fact of altered secretion, to observe its appearances, tracing their mutual connexions—as also to the act, and to note the peculiar

characters and individual properties of the morbid matter after its entire formation. This is a most interesting course of inquiry to the cultivator of pathology, and one full of promise of reward, were but the means of cure equal in the end to correct the morbid state, when a true knowledge of its nature exposes the errors of diseased vitality in their birth. But we are not so sanguine ; it seems to us, that it is only hunting in the pigmy instead of the great world. The grand features of health and disease tell in broader terms the same truths ; and we need not turn away from them, to seek for sounder knowledge in more obscure and narrow forms, than the beautiful body of man before the naked eye, no more than we should close our sight from sun and moon, to search for greater illumination among the inferior constellations seen through the telescope. It is a sense of the little profit derivable from such inquiry, that induces us to prosecute it with some perseverance, in order to shew our familiarity with a matter, on which we would advise our colleagues to moderate their hopes, and not to spend well meant industry in a course of inquiry of so poor a value to the world.

Tuberculization, in common with simple engorgement of tissue, is a matter of daily observation ; and we have the purest examples of it in the lymphatic glands, which are so near to the surface sometimes, and on such exposed sites as to be completely within our reach, while we observe the progress of the malady. The individuals generally present some of the more striking features of the scrofulous constitution, but they may or may not be suffering from some evident modification of their ordinary health. The glands begin to enlarge, and their volume increases progressively until they actually deform the part, and it is considered wise to remove them by the knife. During all this period there has often been no sensible pain, but only some slight feeling of tension, weight, soreness, or other inconvenience, depending chiefly on the physical distress caused in the part by the enlarged body ; and the pulse and general functions may never once quit the common course

of health. Examined by the microscope, such glands are, however, found choked with tubercle, occupying every space in the mesh of tissue. It is our conviction in this case, that the gland swollen with engorged vessels becomes readily subject to the tubercular diathesis; and the capillaries, which hitherto exuded serosity from the blood and the matters needful for its nutrition, are possessed by the tuberculizing affinities, separate from the current in circulation the elements of the embryon of tubercle, which having once assumed its form continues to grow by the addition of material secreted, until by its accumulation it deforms the organ beyond repair. The separation of tubercle from the vessels now proceeds until the circulation is wholly stopped. The gland if not removed, or removable, must derive every supply for further development of the morbid matter from the surrounding membrane, now become a cyst to a tuberculous mass, or else the tubercle, ceasing to exist, gives way to chemical decomposition, and its soluble matters are removed by absorption. The membranous envelope then embraces the residue of insoluble salts, and becomes thickened by the gradual addition of more plastic matter organized around it, sometimes to undergo the change into cartilage or bone. Such is the course of tubercalization in engorged glands; but as this morbid process may succeed to engorgement of any portion of the frame, we will do well to anticipate the fact by a few remarks. So long as it pursues its course thus in a detached part, not indispensably bound to the great functional centres, the progress of the secretion and growth of the tubercle proceeds with so great a calm, as to be scarce observed except by the deformity it causes. But when it pursues its course with engorgement of portions of brain or lungs, the constitutional symptoms may sometimes be considerable, especially if it is a very central part in the nervous system, or large extent of the organ of hematose; and so with other noble divisions of the economy.

Tuberculization along with the plastic process is, perhaps, the most common form in which this morbid condition pro-

gresses in the animal frame. It is for a certainty independent of inflammation, although this may frequently conjoin with it at one period or another in such cases. The inflammatory phenomena may either precede, accompany, or follow the plastic tuberculizing process, or fail to appear altogether. We will take, for example, tuberculization of the lining sack of the belly; and we have often seen tubercle of remarkable thickness covering its walls, and solidifying the great omentum entirely, yet during life, the patient never scarce complained of pain, nor acute tenderness, nor was oppressed at any time with inflammatory fever. The whole of the symptoms were generally referrible to the cachectic habit in the first instance, and next to emaciation and hectic; whilst the abdomen swelled, grew tense and uneven, losing its suppleness and softness to the compressing hand. There is also the tuberculizing process which proceeds in common with the infiltration of organizable lymph in the neighbourhood of abscesses, which presents no signs of vital movement deserving of being called inflammation. It often happens, that glandular bodies and the paranchyma of organs are attacked by infiltration of coagulable lymph, independent of the true symptoms of inflammation; and, in these instances, the embryon of tubercle may also be secreted together with it. In the one case, as in the other, the constitutional symptoms are very little removed from the ordinary appearance of the scrofulous habit, or an aggravated cachexia. But no indication of functional reaction necessarily marks in a glaring manner the onset of the local deposition. Although the combination of the tuberculizing process with that of plasticity may be said to embrace all cases of the pathological condition, when lymph is secreted into the textures of the body, yet there are other instances where this union is more simple and void of further complication. We will include in this category all cases of tuberculization in common with the plastic process, or following upon it, in which pain in the locality, or inflammatory fever are wholly wanting. There is no doubt of this particular union being thus free from

complicating disease, no more than of the fact, that the action of the vital affinities, whereby organizable lymph is separated from the blood in circulation, is very frequently a pure change of the vitality of the part where the phenomenon is manifest, independent of phlegmon. The occurrence of induration of the lungs and as well of the parenchyma of other organs and tissues by a plastic process, in which the symptoms of inflammation fail entirely, is now well ascertained; and we have seen cases where hepatization of the lungs proceeded without pain and without fever. But, in such cases, where death followed, the hepatization has been found every way perfect as a process of plasticity.

Tuberculization, together with inflammation and the plastic process, is a most ordinary appearance. Whatever part inflammation attacks in the ill habit of scrofula, is liable to grow tubercular, provided the inflammatory action gives way to the plastic process, without passing into pus to form an abscess. The capillaries of the inflamed part separate the embryon of the tubercle as well as coagulable lymph, and the secretion goes on into the parenchyma of the organ. The only needful condition for these phenomena would appear to be the occurrence of phlogistic action in an individual whose constitution partakes strongly of scrofula, with the cachexia already predominating. Perhaps one of the best examples of it is, the inflammatory tubercle of the lungs; in the midst of consumption the poor sufferer is attacked by circumscribed pneumonia, and dies. The part is found hepatized, but in a peculiar manner, which characterizes complication with the tuberculizing process. This part of the substance of the lung is solid and fleshy, and deprived wholly of air; the whole parenchyma, in short, is filled with blood in the vessel, and a plastic matter infiltrated largely into the texture. It is more elastic than pure hepatization, and by no means as friable, but rather tough between the fingers. The surface, when divided by a sharp knife, is brighter and ruddier, rather than liver-coloured, or obscure red; and on

minute examination, it appears to have a very fine granular aspect, like pulmonary apoplexy, but very much finer still. There is also a degree of seeming transparency hidden in the opacity of the mass, which is wholly wanting in other forms of hepatization, and very sensible to the familiar eye. There is no pus in the tissue solidified in this manner, and it never passes into suppuration, never becoming grey hepatization. It resembles somewhat the solidification of the lungs in children from lobular pneumonia, which last often goes no farther than a plastic process, to waste ultimately by the pressure of the air from within, and terminate in great dilatation of the grosser bronchial tubes. But the tubercular solidification by the process of phlogosis is, however, characteristically different to the practised observer even in this early stage; and this is still more evident after awhile; for in this case there is no subsequent loss of bulk, nor dilatation of bronchia. There is, on the contrary, an evident progressive enlargement.

We have now approached the subject of the transition of inflammatory growth into tubercle—a real bone of contention for a long period among pathologists. We will not delay to argue a reality, but proceed forthwith to trace the appearances of morbid transition; which we find to occur in a series of conditions in some degree different. Morbid transition may happen as a continuance of previous inflammatory or plastic process, of which it had been a partaker from the beginning; or it may supervene independently on previous inflammatory or other growth. Inflammatory tubercle, however, belongs to the former rule; and in the case of tubercular hepatization, the embryon of the tubercle is separated from the circulation by the tuberculizing affinities of the capillaries, equally with the coagulable lymph of the plastic process allied to inflammation. We are quite of the opinion, of infiltrated tubercle being the direct result of a tubercular hepatization in the lobular, or even the general form; and we will endeavour to show the steps of the change. The solidified part, as it appears immediately on

death from inflammation of the lungs, we have already described; but in examination of the same lung, or a number of others, we may find solidified parts of the same form in all the various stages, from recent tubercular hepatization into pure infiltrated tubercle. The solid portion of lung gradually parts with the colouring matter of the blood, which it presents soon after the inflammatory process, it becomes slightly reddish, then waxes greyish-red, and rosy-grey, until at last it is found yellowish-grey and whitish-yellow, and finally opaque-yellow. Sometimes we may observe all these several degrees of transition in one lung; but we have had frequent opportunities of convincing ourselves of this gradual progression, by comparing the product of a great variety of corpses in the dead house of the vast civil hospital of Vienna. On fracture of the solidified portion, from the moment it assumes the yellow appearance characteristic of tubercle, we find the broken surface wears the aspect of the foregone organic arrangement, and most frequently a delicate remnant of a colour of the lightest rose. But this even, and also the last traces of the parenchyma, disappear with the complete growth of the tubercle.

Here two questions start before our mind, as to how the tubercular transition is accomplished, whether it be by the embryon of tubercle mingled in the product of plasticity tainting the whole, altering it, by a sort of ferment, or by procreation, into its own kind; or whether the tuberculizing affinities predominating and persisting after the inflammatory plastic acts, continue tuberculization even at the cost of the product of phlegmon. The latter is our accepted opinion, appearing to us altogether in agreement with the best ascertained facts; for were it otherwise, we must thence allow an inborn faculty of generating itself and kind, either in the embryon liquor or perfect tubercle, which is neither probable nor yet sustained by any observations at all well established; and we are disposed to grant this ability in origin solely to the vital affinities of the diseased locality. Were it even proved in a satisfactory manner, which is not cer-

tainly the case, that the globules of pus possess the property of changing those of the blood into the purulent form by mere contact in the proportion of one to eight ; and were this to happen external to the body within eight or thirty-eight hours, as stated by Gluge, still we could not infer therefrom, that the tubercle globules are endowed with an analogous virtue. We lay aside, therefore, all idea of conversion by ferment, or direct alteration of the elements of the inflammatory plastic product into tubercle, not only as untenable, but as highly improbable on bare consideration.

This transition presupposes two distinct acts, which are worth while considering for a moment, in order to give greater distinctness to our notions of the process of change. The one of them is the continuous development of the tubercle ; and the second is, the removal of the coagulable lymph secreted at the first in common with the embryon of tubercle, as also of the organic structure of the infiltrated part. The presence of foreign matters in the lymph thrown out of the capillaries of the part of late inflamed, must considerably impede its organization, otherwise so often perfect, rendering its durability less permament, its organizing affinities less effective, and more submissive to those others of the blood and its vessel of circulation, which attract, in common with the lymphatics, the elements of organic decomposition into the current of the vascular system. We have established the probability, that the material of plasticity, in this instance, is more than usually obedient to external influences ; and we will now see how readily its removal can be accomplished, according to the gradual progress of the deposition of tubercle. We have already accepted the truth of the assumption of the persistence of the tuberculizing affinities in the part after inflammation and the plastic action have ceased and we derive from this cause continual addition to the amount of tubercle. The accumulation and growth of the tubercle must overwhelm the product of a more temporary act, for they proceed in considerable force. The pressure to which the

remnant of organized lymph is subjected thereby on every side will hinder its nutrition, and instead of a constant change of substance, there can only happen progressive atrophy. The increasing tension kept up in this manner from within the tissue itself, acts more generally, and with greater efficiency than strap dressings can do on the proud flesh of wounds, or the bandage on the volume of the limb it involves. Nutrition is, at any time, a delicate process in the complicated animal machine; and a very slight hindrance sometimes suffices to throw an insuperable impediment in its way. Organized lymph, however, is subject to gradual loss in the nutritive change, wastes more rapidly as thus impelled, and can disappear sometimes with amazing quickness in making way for the advancing tubercle. Thus the change of the inflammatory growth is readily understood, without supposing the newly organized lymph in it puts on the tuberculizing action; and notwithstanding new tissue may undergo a series of morbid influences just as the primitive, yet we are of opinion, in this case of tubercular transition, it is not so; for it cannot so much as organize perfectly, and maintain itself together with the forcible and rapid growth of tubercle. We must admire the large part the assumption of form acts in the pathological alteration which we have discussed; and so long as the vital affinities compose the morbid matter, considering its durable qualities, we are not astonished at the result. But after we have generalized the means of transition of diseased texture from inflammatory growth into tubercle, our real progress in positive knowledge has been very little; for we have but learned in detail a fact evident to most impartial minds in the broad perception of daily events.

Tuberculization of coagula in veins has been occasionally met with in the large trunks; but this has happened seldom enough to leave the world in considerable doubt, as to the real condition of the coats of the vessel. Dr. Carswell gives us a drawing of a specimen of this kind, in which the tuberculous matter occupied the whole calibre of the portal vein, resembling

very much the colourless coagulum of phlebitis. We are not told whether or no the vein was thickened, opaque, or otherwise changed by the process of plasticity or of phlegmon; and in this obscurity, failing opportunity so rare to satisfy our suspicions, we are left to form an opinion, upon what happens in the veinules bordering on tubercular ulcers, as to the process in larger vessels. The veinules so situated, are exactly in the circumstances most fit to inflame; and in the tuberculous cachexia there are four modes of termination for the coagulum resulting from phlogosis. The blood being arrested by the coagulation caused by the vital affinities of the inflamed coats of the vessel, must either be dissolved again by the quick return to health, or pass into organized fibrine, or into pus, or into tubercle. The vivifying influence of health, glowing from the coats of the vessel, restores the blood to its pristine form of a fluid fit for circulation. This property of the vessel on the blood it contains is but a part of the vital agencies which are everywhere in operation in the economy, to preserve one great harmonious whole amid such a numberless variety of instruments. The vitality of the vascular walls, in health, influences the circulating fluid, as ought to be for the purposes of life; but when this vital condition is altered considerably from this standard so healthful and good, it falls into the sphere of disease, and its action is henceforward followed by morbid effects. If an inflammatory attack on a vein does not give way to a return to health, but gives palce merely to a plastic process, the coagulum in the vessel passes shortly into fibrine, which looses the colouring matter, and becomes organized, to undergo the partial union with surrounding textures and gradual atrophy. When, however, inflammation has coagulated the blood in a vessel, and only makes room for the suppurative process, the whole or greatest part of the neighbouring coagulum, instead of undergoing the healthy resolution, or even fibrinous organization, passes into pus; for the vital affinities glow purulency, or the forces composing pus, into the mass. If, on the other hand, an inflammation of a

tubercular character coagulates the blood in the vein of a very cachectic person, and instead of resolving the morbid action immediately abandons it only to the tuberculizing process, then the affinities of tubercular composition glow from the venous coats through the mass, which in place of healthful resolution into fluid blood, or else change into organized fibrine, or into pus, passes into tubercle. We are, therefore, of opinion, the venous tubercle derives the first condition for its formation in an abortive phlogosis of the coats of the vessel, but which soon gives place wholly to the action of another morbid state of the vascular vitality, the affinities of tuberculization. Such imperfect phlebitis we have often had occasion to observe in all cachectic maladies; sometimes it continues for a short period, causing dropsy of a limb below the coagulum, which disappears when the imperfect inflammatory action ceases. When it happens nearer to the period of decease, it may persist also in an abortive form until death, and the autopsy discovers doubtful or very slight phlogistic alteration of the vein, with mere coagulation of the blood in its interior, which has neither experienced the fibrous, purulent, or other changes. This mild form of the phlebitis is particularly frequent in the last period of carcinoma, when the powers of life are almost exhausted, and nomore violent vital attacks are consistent with the prolongation of life. It seems as if the system can no longer rally either the nervous or vascular reaction capable of producing an active work of plasticity or of suppuration.

If we throw aside all suspicion of foregone phlegosis in such cases, we are then reduced to the alternative of granting to the tuberculizing act the ability of coagulating blood in the vessels, which has hitherto been considered as special to phlegmon. We cannot well suppose its accumulation by secretion in this place, where there is a constant current of fluid. It is impossible to conceive the entire deposition of it in a like situation, and as it were upon a single point, allowing even the supposition to be true, of its actual presence primarily in the blood. And, notwith-

standing, it might well be possible for the power to coagulate the fluids in circulation, to be a part of the process of tuberculization, this is yet scarcely probable. If it were so, tubercle, which is the next common morbid product to pus, ought to be much more frequent in the venous trunks, and in some proportion to the often occurrence of phlebitis. But there is no agreement between the frequency of tuberculization and its seldom localization in larger veins, that may justify us in allowing the power of coagulation to the morbid process simply. If we were to grant this,—it would be but allowing it another feature in common with phlegmon, making their characters less distinctive, and more in unison. But we see it combined so clearly in many other cases with the plastic and inflammatory acts, that the most reasonable view to take of tuberculization of venous coagula appears to be, to look upon it as a similar complication of pathological states.

There appears to us to be possibly two means that might facilitate the transition of venous coagula into tubercle; these are, firstly, the strongly cachectic blood, particularly in the latter days of the malady; and, secondly, the accidental presence of tubercle to a considerable amount in it. By the former circumstance the mass of fluid in circulation must come more readily into the sphere of action of the tuberculizing affinities, being already particularly disposed to partake of the character of the disease. Besides, the presence of tubercle in the blood would be a step in advance, and contribute much to the transition by the direct influences of the morbid product.

Leaving aside the subject of the uses of the globules until another occasion, we will consider for a little the relative qualities of the local chagne of vitality in tuberculization, which is the next link in the chain of morbid phenomena for analytical research after the product and the act of tuberculization. It is by a formal comparison alone of the peculiarities of the tuberculizing state with those of other morbid conditions, that we may hope to appreciate them truly, whilst we generalize a series of various but similar appearances, to reduce them to ultimate facts. We

will, therefore, single out into so many separate propositions the general phenomena manifested in the economy in the tuberculizing of parts.

1. The tuberculizing affinities can accumulate, and the capillaries give exit to the embryon of tubercle, and the tubercle globules assume their form, devoid of any startling turmoil of the general economy beyond the ill habit of scrofula.

2. These phenomena also often occur with marked increase of the normal secretion and inflammatory fever.

3. The seperation of the elements of tubercle proceeds very often, in common with the secretion of coagulable lymph, or some modification of it.

4. The tubercular secretion is not seldom combined not only with the plastic process, but also with inflammation.

5. It is sometimes accompanied and often followed by hectic.

The proof of the first of the propositions is of high moment to the practical physician; for its truth insists most strongly for the promptitude of his aid to restore the cachectic habit of scrofula to the order of health, and for boldness enough on his part to urge his charge and friends, at the risk of incurring the responsibility, to take all needful precautions. It is the more serious on the account of the circumstance, that this work of havoc can go on a considerable way, even in noble organs, in such an insidious manner as not to create a suspicion to the sufferers and those about them, by the reaction either of the vascular or nervous system. It is, therefore, not the tuberculizing of small extent of tissue, and of organic structures of inferior consequence in the animal economy alone, that is unattended by remarkable tumult of the great functions of life. We often perceive pain, heat, swelling, and other phlogistic changes in organic structures of less note, whilst no febrile reaction awakens; and this indifference of the essential powers of life to the process of inflammation is more evident still sometimes in tuberculization of even important organs. It is not, howe-

ver, an easy matter to produce an example of pure tubercle secreted wholly independent of the plastic process. Since, however, under numerous circumstances, we detect the tubercle globules by the microscope, devoid entirely of any appearances of coagulable lymph, or organized fibrine of abnormal formation; we may safely conclude, that how frequent soever the combination of tuberculization with the plastic process may be, it is frequently wholly independent of it, and even devoid of such complication. The best specimens of pure secreted tubercle seem to us those cases of its accumulation in the bronchia of the cow, whose chest is mobile enough to express the morbid inabsoluble secretion from the air cells and smaller tubes, but whose powers of expectoration are somewhat limited as compared to man and some other animals. It is nevertheless probable, that the plastic process, or even inflammation, combines at one time or other with the tubercular secretion in such cases on various points of the lung; but still the composition of this root-like mass of almost pure tubercle, where there are no old cavities, proves the affection to have been simple secretion of the morbid product, at some period of the malady, and for the greatest part. Also in the human subject, we find a pure mass of secreted tubercle in its broad appearances; and in cases where we have observed tubercle filling the fallopian tubes and uterus; we never detected traces of either the plastic or phlogistic process in the former, and sometimes even no secondary morbid state bearing these qualities in the latter. Besides, the history of the deceased, in such instances, never led to a suspicion of its presence in the uterine organs, and appreciable symptoms of it had failed entirely. There is, again, the instance of tuberculous glands of the lymphatic apparatus; in them, when not enormously enlarged, we often observe the tubercle globules of most various volume crowded everywhere through the substance, devoid entirely of appearance of coagulable lymph, or the organized fibrine of plasticity. We might select other cases in support of our proposition, but we would thereby exceed the limits of our

article, and we will dismiss the subject under promise to return to it on some other occasion in a more practical form. It appears to us, nevertheless, that we have already established the independent secretion of tubercle on localities of cachectic individuals, clear of all remarkable turmoil of the general economy beyond the derangements of the ill habit of body.

This is a fact of chief consideration to establish, since it will constantly avail us in therapeutics, and spare us from numerous errors of the advocates of invariable phlogosis, and of the scholars of Broussais, without throwing a veil over our acquaintance with its often combination with the plastic process and inflammation. This union is, indeed, so frequent as to be almost general; but we must ever keep in mind the universal rule of independent tubercular secretion, however common be its alliance in the manner alluded to. We may establish upon these grounds, that the first principles of cure ought to be directed against the cachexia and the tuberculizing affinities of localities simply; that the second should be, to impede and stop the plastic associate; and that the third must be, to quell instantly accompanying fever or inflammation. There are cases, of course, where antiphlogistics and powerful solvents are not needless alone, but hurtful; and such are those of simple tubercular secretion, when alteratives and tonics are required, and also where the plastic associate is almost a matter of indifference by reason of the locality.

The truth of the second proposition is too evident to require argument; and it is only necessary to refer to what occurs in catarrh and bronchial inflammation, to satisfy every one of the fact, and to clear up the manner of procedure of the like phenomena on other secretory surfaces. The principal practical deduction we can derive from this source would seem to be, the great necessity to lessen the secretion and quell the febrile movement, and guard especially against those pulmonary attacks. It appears, indeed, too clearly proved by observation and experience, that the one and the other of these morbid conditions

but aggravate the activity of the tuberculizing affinities, and aid the fixtion of the morbid products which thence results to the membranous surfaces of the air vesicules and tubes on every hand. However this is not always the bare consequence of the increase in the quantity of secretions; the abundant quantity would seem sometimes to act the part of a diluent rather than otherwise.

The third of the series of propositions is of the highest interest, and deserves all its bearings to be pointed out with nicety. We have already given examples of the process of tuberculization along with the exudation of coagulable lymph, and we will restrict our observations in this place to what relates to this combination of maladies in the lobules of the lungs and minute air tubes. We conceive, that the plastic process may conjoin with tubercular secretion in the pulmonary organs in three forms, to wit, by the exudation of lymph in common with tubercle into the substance of several and many lobules; or else into one lobule only; or, lastly, into any number of air tubes as a secretion from the mucous membrane. On another occasion we purpose to discuss fully the subject relating to this form of tuberculization. Without taking into consideration the act of plasticity as an augmentative of the tuberculizing process, we see here at once the danger of the combination. We are of opinion, that tubercle is secreted from the mucous surfaces in a much more general manner than is commonly supposed; and that this may happen also in the lungs without harm, until some union of disorders occurs, such as also the one under consideration, and brings in its rear the local attachment of the tuberculous matter. This is a consideration of some weight, and should serve the physician as a license for effective and bold treatment in doubtful cases.

Our fourth proposition insists upon the operation of the secretory affinities of tubercle together with phlegmon and inflammatory fever; and this complication of diseases is one of the most serious that can occur in the lungs; for extensive por-

tions of them are often thus overwhelmed suddenly with the scrofulous matter, and irreparably lost. The tuberculizing state is quite borne from sight by the violent associate in the part and the turmoil of the general economy. It here becomes the first duty of the physician to quell at once the inflammatory phenomena. If the febrile movement is active, and the circulation under much excitement, general blood-letting is, in such cases, as requisite as in large hæmoptæ. But the local application of the antiphlogistic treatment to the chest, and the administration of calmants for the heart and circulation, should never be omitted, and might be regarded here as the general means of cure.

Fifthly, we have coupled the tuberculizing state with hectic; and this is the final form of its appearance, and fatal for the most part when the site of the malady is the lung. Just as a feeling of well-being is attached to the right performance of the functions of the frame, so when they act in a morbid way, the sufferer in general perceives some inconvenience, accompanied commonly by irregularities in the broad phenomena of life. So it is in the scrofulous cachexia with ripe tubercle; and we hear the pitiable man complaining of dwindling of force and energy, and of growing disorder insidiously arisen, may be, in in the bloom of youth, like the "worm in a bud" consuming it away, to grow fat in its place. The healthful pulse seldom beats again, in giving way to the hurried stroke of hectic; and comforting warmth passes into irregular flushing heat; the palm of the cachectic, when it presses a friend's, burns with new ardour —to grasp a long farewell before the journey to the tomb, hot as the kiss of grief. The periodic fever of the ill habit sets in; the creeping shiver, the oppression of heat and thirst, and profuse sweats in succession, alarm the sufferer at length to his serious position; and seeking the guardianship of the physician, he hears him mutter something: alas! this is irrecoverably ill. He struggles with the disease, dauntless for a time; but growing lean from the beginning, he wastes away to die, after contention with a host of associating evils.

Here, again, we lose sight of the tuberculizing state of the locality in the general symptoms of cachexia, which seems referrible to some higher order of change in the vitality, than the mere general reaction from the local elaboration of tubercle.

There is another peculiarity of tuberculization, to wit, the often punctiform deposition which is worth regarding; but as yet the physician has not been able to draw any inference therefrom for guidance in his treatment. It may be, however, that each remarkable character of disease might conduct in some fashion to more exactness in the cure; and a better knowledge of the local action of medicines may, perhaps, one day avail something in this relationship. This feature of the morbid deposit seems more than accidental.

All we learn by the inquiry into the tuberculizing state is, that it is allied to engorged tissue, increased secretion, the plastic process, or to phlegmon, and is compatible either with fever, or perfect tranquillity of the great functions of life. Besides the tuberculizing affinities appear not alone capable of composing the embryon of the morbid product from the blood in circulation, for secretion from the capillaries, but also of forming entire coagula into the element of tubercle in veinules as well as in larger veins. That, notwithstanding the secretion of tubercle may proceed from the mucous membrane of the lungs unperceived, yet in its permanent localization in them, it is so commonly allied to a plastic bronchial affection, that we might be justified in receiving it as a mere modification of catarrh, whether habitual or febrile, were we not aware of the specific characters of the product, and another fashion for its production in other textures. For all purposes of practical medicine, however, tuberculization of the lungs ought to be viewed as a process of the form of catarrh; and the detection of its kind by medical analysis, must only call forth additional cares for its efficient, and may be the specific cure. There is, therefore, nothing in the act of tuberculization alone, nor any single attendant symptom, that can lead us to its recognition; and we are left to

discover it in its alliances by the voided appearance of the matters, the physical state of the organ, and the features of the ill habit of body.

The tubercular cachexia becomes a study of chief importance to the physician, both with the view to the prevention and cure of the scrofulous malady tending to localization in any part. It is clear, from the history of this disease, that the vital duration of the tubercle globules is limited; wherefore if the cachexia can be overcome in the meantime, and irreparable organic lesion prevented during their decomposition, the cure can readily obtain; now this is very frequently the case. We have seen scrofula primarily as a general, and, secondarily, as a local malady; if, therefore, the ill habit of body can be meliorated before any permanent deposition follows, then the generation of tubercle is harmless; and such cases are far from seldom. These general principles are, therefore, most flattering to the physician, and may justly inspire him with lofty hopes. Although scrofula taken in the universal sense is a most manageable malady, indeed much more so than some others, yet it has particular forms which are often altogether beyond the control of medicinal weapons. We will, therefore, try to single out each set of cases from the assemblage of the whole, to consider them apart.

The tubercular ill habit is most frequently an old family disorder, hereditary since many generations, and, as it were, an inborn peculiarity of the vital existence of its victims.

It is often transmitted from parent to offspring without more remote hereditary origin. This may be the result of the acquisition of a cachectic habit on the part of either father or mother previous to cohabitation, or on the part of the latter during pregnancy, or else from derangements of the function of generation, more or less local, which exercises a bad influence on the development of the fœtus, and gives birth to a child of sickly constitution.

Again, it may be acquired at any age altogether indepen-

dent of hereditary inclination, either by an ill and imprudent course of life, or the vital disorder caused in the economy by casual disease, or by accidental exposure to the noxious effects of elementary and morbid influences, bad diet, and improper regimen.

These are important distinctions, which ought to be kept in view by the medical practitioner, when he would wish to determine with some degree of certainty, the curability of the affection. There can be no doubt that the third series of cases, if timely treated, are by far the most manageable, provided the patients can be removed beyond the influence of those causes, that, undermining the health, brought on in consequence most serious constitutional disease. If the economy of the individual is not effectually broken down, and the cachexia, without fatal local change, be there alone to treat, the cure may be considered almost certain when properly undertaken, and with the advantages of suitable change of air, a proper course of life, invigorating diet, and corresponding regimen. But, again, not a few of those cases admit of no hope of cure, because tubercle often attacks the lungs and noble organs suddenly, in them, during acute disease, or otherwise seriously by without being anticipated.

The second series of cases is generally of an ill character; and the infant being born, for the most part, in a weak, sickly, or newly predisposed state, often falls a victim to tuberculization in earliest life, and seldom withstands the struggles of infancy, childhood, and youth. But age is in its favour for throwing off entirely the scrofulous disposition; when the constitution once fairly rallies, and all lapse into the sphere of severe disorders is efficaciously opposed. Now this can obtain only by placing the individuals in the circumstances most favourable to recovery from the tubercular cachexia, to the invigoration of the general economy, and to the prevention of the casual maladies to which they are so liable.

The first set of cases are of a very mixed character; and

for this reason they are sometimes the most serious of all, and on other occasions remarkably favourable. This difference depends upon certain peculiarities of family scrofula, which are well worth noticing, and deserve particular attention from the practical physician, on account of their comparative constancy, and value to him for establishing his prognostication. We will next detail some of the most striking of these features.

The cachexia of scrofula has often a family period of development, and not seldom a particular duration of the same stamp.

It has very frequently a family point of localization for the tubercle.

It has sometimes a family character as to its degree of malignancy.

The exactness of our third proposition is familiar to the vulgar; and we do not think any observant pathologist will hesitate to allow its truth. It is only necessary to look back upon the circle of acquaintance to satisfy the mind that the same form of scrofula is more severe in some families than in others; and even in the case of the glandular affection alone, we may soon perceive the particular character of it by its ravages, or the traces of them left behind after the cure. We do not regard the circumstance of its special occurrence in the lung in some family, as a fair proof of its malignancy, because the locality is rather the reason of fatality here; but we desire to expose its greater obstinacy and danger in the same forms of local expression. It is thus glandular tubercle is a most serious affection in some families, and trifling in comparison in others. How often do we see every lymphatic and lacteal gland engorged and changed to tuberculous matter, and the sufferers die from rapid increasing cachexia, and its necessary associates, local organic alterations. Sometimes we see whole families of children, with solitary exceptions, die in infantile age from scrofula, generation after generation; and the same form of the disease of a milder character scarcely carries off a single individual of other houses.

Also, in the curable cases, this difference influences very much the success of the physician, owing to the occasional pertinacity of the malady from hereditary character.

The second proposition seems too clear to admit of doubt; and on reference to histories of cases and families, the fact is still striking amongst all the irregularities of appearance of the malady. It sometimes tends in one house to affect the lungs, in another the lymphatic system in part or in general, in others, the external cellular tissue or the cartilages. Although no fixed law ought to be applied to the onset of a general disease, yet, as a part of the reckoning of probabilities, those features of family history are not uninteresting. They may sometimes enable us to form the prognostication with more certainty.

Lastly, it has often appeared to us of much importance, that in a considerable amount of instances, there is a certain period of life when the members of particular families are most liable to the attack of tuberculization. When we were wont to enter fully into the history of cases, we often found this fact remarkably pourtrayed; and we have ascertained frequently that the infant age was the tuberculizing period in some houses, manhood with others, and advanced age for not a few. We have met with instances in which whole families, with few exceptions, have been carried off at twenty-six years, or twenty-eight and twenty-nine; and it is a very common occurrence to hear of parents losing their children by this sad disease at an almost equal age. The broad facts of general statistics are of very little value to the medical practitioner, since it is individual cases he is called upon to overlook; but family story conveys to him more useful information. However subject to fallacy our anticipations from such previous characters of the malady may be, the knowledge of the peculiarities of the family type may often lead to the exercise of wise precautions, when such measures might otherwise be neglected.

There is another field of pathological speculation, which must ever remain a mystery to the human mind, this is the ori-

ginal site of tubercular cachexia, and the state of existence it may hold. However, many ingenious men have not hesitated to stumble onwards too perseveringly on these grounds, nor to mystify the public by their observations on the way; but we might as well hope to explain the condition of the soul in immortality, on the happy estate of paradise in heaven, as reveal such vast wisdom. The best dream of the pathologist would be in the end mentionless in inferiority to the poorest conception of a Socrates or a Plato, on the one hand, and of a Milton and a Klopstock on the other; and any assertion of discoveries would be quackery as worthy of our contempt as the tales of Mahomet. It is not, indeed, strictly speaking, criminal to inquire into hidden causes and incomprehensible attributes of things; but it is weakness on the part of the physician to amuse his imagination on those of disease. It is an ill regulated mind which will expend the hours of ennobling fantasy on a hideous train, when it may choose for endearment whatever is beautiful and good. And, again, what value is it to the practical physician to bestow an entity on disease?—none—but a loss; it may lead him to view that as a whole which he must cure in detail. Does he desire to give it an empire in the blood, or in the vascular organization, or in the nervous system? it will profit him in nothing more than in the knowledge of its locality. It is the disease *in situ* he must look to, and quell it there, and repel its associates. The fact, once established, of an altered blood in tuberculous cachexia, is no proof of such being the disease; we could only conclude therefrom the individual is diseased; and his blood is altered; so also is his pulse, and some portion of the organic structures more particularly, and so on. If after having for a series of ages looked upon neuralgias as local but peripheral affections of nerves, it was at last discovered some of them were the expression of central disease, we know still no more of the attributes of pain, but have only completed the knowledge of its localities. It was long before the near analogy of the buff of blood produced in the part inflamed, and the coagu-

lable lymph was allowed; but medical men did not think afterwards seriously of attributing the inflammation to the buff. But let us look for a moment at its phenomena, aud compare them with those of tuberculization; there we have fever, hot pain in some part, or this alone, attended by coagulation of the blood in the capillaries of the same, circulation only in the vessels of a larger diameter, and excessive development of fibrine in the blood; and sometimes coagulum alone or with pus filling the whole cylinder of a vein, when this is the part inflamed. No one would say such material changes are the malady or germ of the disease, they are but its products. So also in tuberculizing of parts, the accompanying modifications of the blood, and the occasional presence of the scrofulous matter therein, are every bit as bare necessary accompaniments. The old, blind dame cannot travel alone, she is led by her child; nor yet can a serious tuberculous change run through its whole courses, unless it brings with it some alteration in the circulating fluid of its own stamp; but these are no essential, they are secondary or casual alterations.

(*To be continued.*)

ART. XIX.—*Account of a Case of Poisoning by Monkshood, which formed the Subject of a Criminal Trial; with Observations.* By T. G. GEOGHEGAN, M. D., Professor of Medical Jurisprudence, Royal College of Surgeons in Ireland, &c.

THE case which forms the subject of the following observations will probably be found interesting to medical jurists, as exemplifying a class of inquiries of considerable importance in medico-legal practice, though not of usual occurrence, in which the fact of poisoning *in the abstract* is determined, without any *exact* evidence as to the nature of the *special poison* employed.* The substance considered by the medical witnesses as

* The only instances of "general poisoning" I find recorded as having been tried in the United Kingdom, are those of George Thom, for the murder of the

most probably administered, and which the subsequent disclosures have shown to have been that employed, was monkshood; a poison, which the records of toxicology and medical police indicate as rarely taken in fatal quantity,* and one which, so far as my information extends, has not hitherto formed the subject of a criminal investigation in these countries.† Recent inquiries, however, which I have found it necessary to institute, affording reason to fear, that, in certain parts of Ireland, it is occasionally resorted to with murderous intent, I deem it desirable to furnish an abstract of the case, and do so the more willingly, as a most incorrect account of the trial has been given in a local

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Mitchells, at Aberdeen, 1821, of Mary Anne Alcorn, Edin. 1827, and a recent case, that of Rachel Shannon, tried at the Cork Assizes, 1837. (See Jebb's Reserved Cases, Dub. 1841, p. 209). There can be very little doubt, however, that many additional cases of this kind would have come to light, had medical men devoted more attention to the discrimination of the circumstances under which an opinion in favour of poisoning in the *abstract*, may be given, although there be no chemical indication of the special agent. It should be borne in mind, that in those instances in which the medical inspector, although unable to give a *decided* opinion, has good grounds for concluding the fact of poisoning to be highly *probable*, it becomes his duty to state this distinctly when examined, as possibly such an opinion, when conjoined with strong moral evidence, may enable a jury to render the cause of death (constructively) certain. The law requires, in criminal cases, that the cause *of death* shall be *certain*, I am not, however, aware, whether, in order to conviction, the certainty requires to be affirmed by the *medical witness*, in cases in which medical evidence *is brought forward*. I am informed that the cause of death has been determined by a jury in cases in which no *medical witness* was examined.

* In a return furnished to the House of Commons, "of all the inquisitions held in cases of death by poison in England and Wales, during the years 1837 and 1838," it appears that out of 545 cases, two only were caused by monkshood, and both accidental. In an account of the statistics of poisoning in Denmark, out of ninety-nine cases in five years, there is not one by monkshood. (Zeitschrift für die gesammte Heilkunde, Sept. 1839). A comparison of this with the English return is interesting, showing that while, with us, opium and arsenic are the most usual poisons, in Denmark, poisoning with the mineral acids vastly preponderates.

† A case of murder by this plant, which occurred at Copenhagen, is noticed by Valentini (Pandectæ Medico Legales, 141).

newspaper, from whence it has been transmitted, through various prints, with such alterations and amendments as suited the occasion of the transcribers.

Mary Anne M'Conkey was indicted before Mr. Justice Torrens at the Lent Assizes, Monaghan, 1841, for the murder of her husband by the administration of *corrosive sublimate,** mixed with greens.

Six witnesses were examined for the Crown, none on the part of the prisoner. The following is an abstract of the moral and medical evidence :

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* The introduction of this substance into the indictment, was probably owing to the circumstance that a weak solution of this poison had been found in the possession of the prisoner ; as, however, the opinion of the medical witnesses was opposed to the supposition of mineral poison, it appears likely, that the indictment was drawn previous to their examination at the Crown Solicitor's office. It would be highly desirable, when judicial investigation involves medico-legal inquiries, that an interview should take place, previous to the trial, between counsel and the professional witnesses, as the latter would be thereby enabled to explain their views of the medical facts, and thus prevent discrepancies, which, although not in a legal point of view sufficient to vitiate an indictment, do not possess (I speak under correction) any legal advantage, and must create confusion in the mind of the public in general, and more particularly amongst those non-professional persons who conceive themselves authorized to dabble in complex medical inquiries. The case about to be related possesses an additional technical interest from the fact, that instances are rare in which a special poison is laid in the indictment, and general poisoning proved in evidence ; an attempt was consequently made by counsel for the prisoner, but overruled by the Court, to show, that although proof of a different poison from that laid in the indictment does not vitiate the latter, it was still necessary to prove the special substance ; as, however, an indictment for murder by "some poison to the jurors unknown" is good, such objection does not seem tenable ; this appears also, distinctly from the case of *Reg.* v. *Rachael Shannon*, which I owe to the kindness of a legal friend, and which has been already alluded to ; in this instance (which was reserved by Baron Richards for the consideration of the Judges), the indictment charged the administration of sugar lead, (probably from some statements of the non-professional witnesses) ; no examination, however, was made of the contents of the stomachs of the persons affected, or of the fragments of a cake administered by prisoner ; the medical facts, however, were such as induced the medical witness to give an opinion in favour of poisoning ; the eleven Judges (one being absent) unanimously held the conviction to be right.

The deceased, Richard M'Conkey, was a weaver and labourer, (æt. 40), residing at Clones, County Monaghan, and had, previous to the day of his death, with the exception of occasional trifling indisposition, enjoyed good health; he had lived on tolerably amicable terms with his wife, (who was about 25 years of age), although jealous of her, in consequence of a criminal intimacy which had subsisted for some time between her and a neighbouring individual. It appeared that, some time previous to the fatal event, she had declared to one of the witnesses (M. A. Johnston) her predilection for this person, and that she would elope with him if she had the means, and would administer to her husband "a pill that would put him off the walk" before she went.

It appeared, further, that on the 31st July, 1840, between one and two o'clock, the prisoner, her husband, the prisoner's father and a neighbour, (M. A. Johnston), being in the house and about to dine together, the prisoner went out for salt and returned shortly, bringing some in her apron. There was a pot boiling on the fire, from which she took a quantity of greens and placed them in a smaller pot, she then fried some bacon in a (tin) porringer, and prepared the greens on a table beside the dresser on which she had laid the smaller pot. During this proceeding, the prisoner had her back to the rest of the company, and was so situated as to be screened from observation. Having made ready two plates* of greens, she presented one of them to her father, and the other to her husband, who also partook of some new potatoes which had been cooked in a boiler. The prisoner herself ate of the greens *remaining in the pot in which they had been boiled*, from which she also furnished some to M. A. Johnston, who ate what she received. A neighbour, George M'Meighan, (father of M. A. Johnston), came in when dinner was nearly over, and, on the invitation of the prisoner, sat down with the rest. The deceased having eaten *the greater part of*

* Stated by M. A. Johnston, when examined at Crown Solicitor's office, to be a small or "supper" plates, and to have been well filled.

what he had been helped to, complained that the greens had a "wild, bad (or sharp) taste;" to which the prisoner replied, that "she did not know what bad taste they could have, unless a leaf had been boiled in them;" and added, that "they were the wildest and hardest they had had that year;" and that "she would give them to the pigs." This the deceased would not permit her to do; but desired her to give what he had left to M'Meighan, (who had been previously in excellent health), stating that they would be a novelty to him. Prisoner was unwilling to give them to M'Meighan, but at length did so, saying "that there was dirt in them;" and at the same time helped him to some greens from the pot out of which *she was eating*, placing them on the side of the plate next what her husband had left. M'Meighan ate, in the first instance, prisoner's helping, which had no *disagreeable flavour*, remarking to deceased, when the latter complained of the flavour of what he had eaten, that "it must be the taste of his (deceased's) mouth, as his (M'M.'s) greens were *good*." It should be mentioned here, that neither the prisoner, her father, nor M. A. Johnston, *complained of any disagreeable flavour on the food*, nor were they *in the least unwell after partaking of it*. M'Meighan having consumed the prisoner's helping, next finished what the deceased had left, (a table spoonful), and in about *two minutes*, felt a burning in his mouth,* throat, gullet, and stomach, unaccompanied by any constriction of the fauces; shortly afterwards, he experienced a sensation of swelling of the face, and inquired of a neighbour if it were so, who replied in the *negative*; he also had a general feeling of

* The symptoms above given are those stated on the trial; the following additional ones I had an opportunity of eliciting by inquiry from the witnesses; copious flow of saliva shortly after the meal, with a sensation of numbness, roughness, and prickling in the mouth, coldness of the surface, cold sweats, diminution of the restlessness after vomiting, thirst, and subsequently general soreness of surface; for a considerable time, (some weeks), he experienced also, "a feeling of lightness in the head" after getting wet.

numbness and creeping in the skin. Having gone home, he suffered from most distressing restlessness, followed by dimness of vision, and stupor almost amounting to insensibility. About an hour after the meal, he was found by a neighbour, speechless, frothing at the nose and mouth, the hands and jaws clenched, appearing occasionally as if dead, (syncope), and again reviving. After the lapse of another hour or so, (two from the time of meal), he was seized with vomiting of a green matter, from which he experienced *considerable relief;* there was also some purging. Between eleven and twelve the same night he was seen by Dr. Hurst, who found him labouring under vomiting and purging, tenderness of the epigastrium, cramps, tingling of the flesh, and burning taste in his mouth. He was not sufficiently well to leave the house for three days, and five weeks elapsed before he was able to resume his usual employment.

The deceased was not seen during life by any medical man; about an hour, however, after the commencement of his complaints, (at dinner), he was visited by two of the witnesses, who found him labouring under vomiting of a greenish matter, purging, excessive restlessness, (indicated by frequent jumping in and out of bed), occasional incoherence, locked jaw, frothing (white) at the mouth and nose, and clenching of the hands. His sufferings were terminated by death at 5 o'clock, a little more than *three hours* after he had partaken of the greens.* The individuals by whom he had been visited, and who had previously

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* The following symptoms, which did not appear in evidence, were ascertained to have been observed;—a constant complaint, that his "heart was on fire," intolerance of pressure on the epigastrium; vomiting, at first the greens he had eaten, but afterwards bilious matter; face alternately pale and red, except shortly before death, when lividity appeared, coldness of surface, cold sweats. I am informed also by Dr. Hurst, that after he was taken ill, he wrote to an apothecary requesting him to send him something for a "dindling (tingling) through his flesh, and a biting like on his tongue." It will be observed, that the above symptoms, taken in conjunction with those noted in the text, are almost in every respect identical with the symptoms of M'Meighan.

seen M'Meighan, were struck by the similarity of the symptoms in both cases. In addition to the moral *circumstances already related, it appeared that* during deceased's illness, he indignantly repelled his wife's attentions, and broadly insinuated that he had been poisoned; the prisoner constantly removed the vomited matters, and carried them out of the house.*

The moral circumstances in favour of the prisoner were, that she had afforded her husband every assistance while ill, and had sent a neighbour with money to procure medicine for his relief; there was, morover, no proof adduced that poison had been purchased by her.

Previous to an examination of the opinion given by the medical witnesses, I shall proceed to notice such of the medical facts as have not been as yet detailed. The body was examined by Dr. Hurst, of Clones, the day after his death,† and the following conditions observed by him: complete absence of putrefaction; abdomen somewhat swollen; the stomach empty, its mucous membrane smeared with yellowish-grey mucus, and presenting a dark, brownish-red, or mahogany colour; exterior surface of intestines natural; the other viscera were not examined. The mucus scraped from the lining membrane of the stomach was forwarded to me for chemical examination. I also subsequently received the œsophagus, stomach, and small intestines removed on exhumation, eight days after death, at which period putrefaction appeared confined chiefly to the surface of the body. There were also transmitted to me, on the first occasion, an *ounce phial* containing a light reddish-brown fluid, and a *pint bottle* containing three fluid ounces, of a colourless fluid possessing rather an aromatic odour.

The viscera, when I received them, (four days after they had been removed from the body), were moderately putrid; the

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* One of the witnesses, when examined at the Crown Solicitor's office, stated that she also scraped the floor with a spade.

† The coroner informs me, that when he first viewed the body, there was a good deal of froth about the mouth.

œsophagus natural; the stomach reddish-brown externally; muscular coat well developed; no indication of venous turgescence; the mucous membrane quite firm, and of a light reddish-brown colour, slightly tinged with green; presenting on the anterior wall, at the cardiac extremity, a number of irregular patches (occupying an extent of about three square inches), of a blackish-brown colour, alternating with spaces of a light red-brown: these patches were somewhat raised and not hardened. The posterior wall presented a similar though smaller patch; the lesser curvature, near the pylorus, exhibited a blackish-brown motling of small extent; the mucous membrane of the central third betrayed a very faint staining of a milky appearance, and a few trivial abrasions. There were no traces of corrosion,* ulceration, or gelatinization.

The small intestine contained a considerable quantity of light yellowish-brown mucus, of the consistence of thickly boiled starch, chiefly adherent to the lining membrane, and intermingled with fragments of green vegetable matter, which, however, were so broken up as to be destitute of any definite shape, and consequently affording no botanical indications; the mucous membrane was healthy.

The viscera and other matters had been carefully packed and sealed, and delivered by Dr. Hurst to a constable, from whom I received them in the same state.

After a careful chemical examination of the coats of the stomach, its mucus, and the contents of the intestine, the particulars of which it is unnecessary to detail, I was unable to detect any trace of poison.†

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* Chemical examination afforded no evidence, that the faint whitish staining was due to the action of any corrosive substance; its nature is not very apparent.

† My attention was principally directed to the discovery of metallic poisons, inasmuch as those organic ones which are capable of producing the symptoms of the present case, do not possess sufficiently definite chemical properties to admit of their identification in medico-legal inquiries: nux vomica, which it would appear has in rare cases produced symptoms nearly similar to those detailed, may be con-

The small phial contained $3\frac{1}{2}$ drachms of a slightly reddish fluid; this proved to be merely a solution of common salt containing a little of the colouring matter of blood, (apparently pickle), and had been found in a teapot in the prisoner's house.

The pint bottle contained 3oz. of a limpid fluid possessing rather a fragrant odour. This solution I found to contain corrosive sublimate, (in the proportion of $\frac{6}{10}$ grain to the fluid ounce), alum, and a very small quantity of sulphate of zinc. This bottle was found in a box in the prisoner's house; its contents were, doubtless, a mixture of two gargles, one of alum, and another of corrosive sublimate, which I afterwards learned from Dr. Hurst, had been given her for some affection of the throat by an apothecary.

The foregoing constitutes an abstract of the medical and moral facts of the case.

The medical witnesses examined for the Crown were Dr. Hurst and myself. There were no witnesses called for the prisoner; the evidence, however, of one of the Crown witnesses was, as far as it went, favourable to her.

The following is the substance of the medical evidence* which affirmed poison to have been the cause of deceased's death:

Dr. Hurst "detailed the symptoms which had been observed by him in the survivor, (M'Meighan); the appearances he had found in the body of deceased, and the particulars of the trans-

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sidered an occasional exception (alluded to in my evidence). I would, however, remark, that experience has satisfied me, that although these may be decisive *physical* indications of its presence, the quantity may not be such as to admit of *chemical* detection. In the case which forms the subject of this paper, there was no trace of any vegetable matter, except that already noticed as present in the contents of the intestines. The medical jurist will perceive from the history, that oxalic or the mineral acids, and the alcaline carbonates, were out of the question.

* For the sake of clearness, the evidence of both the medical witnesses is given in medico-legal order, not that of the answers to the questions propounded by the Court and counsel; it is copied from the collated notes of Dr. Young, myself, and a legal friend.

mission of the stomach, &c., to Dublin for examination. He was of opinion that the symptoms and appearances in deceased's case, were those of poisoning, and such as vegetable poison would produce; finding these symptoms implicating two persons, he would attribute them to poison; cholera would not have produced them; this latter disease, or at least vomiting and purging, may be produced by improper diet.* He was not aware of any natural disease which would produce the appearance he had observed in the stomach, except inflammation if it were approaching to mortification. From the appearance of the body, (which was that of a person, who had been previously in good health), he could not pronounce how long deceased had been dead. From an examination of the body alone, he would not undertake to pronounce as to the cause of death. Mineral poisons are more easily detected than vegetable ones: mineral poisons adhere to the coats of the stomach."

Dr. Geoghegan—"had received the matters for examination from the hands of the constable to whom they had been intrusted.—[Details their nature, specifies the appearances observed by him in the stomach, and the results of his analyses.]—Found no botanical indications of the presence of deleterious vegetable matter. His chemical investigations were directed to the detection of mineral poison.—[Assigns the reason, see note, p. 408.]—Some of the symptoms detailed, but not the combination of them, might be produced by natural causes; is of opinion they could not have been produced by cholera: this latter disease may prove rapidly fatal to persons previously in good health. In cases of suspected poisoning, an inquiry into the previous health and habits of the suffering person, should not be neglected. [The symptoms detailed in evidence are precisely such as are produced by certain vegetable poisons. The morbid appearances observed by Dr. Hurst, and by witness, were

* It should have been mentioned that M'Meighan had taken buttermilk at breakfast on the day of the poisoning, to the mixture of which, with the greens at dinner, it was argued, the formidable symptoms might be attributed.

such as may be produced by that *class* of poisons capable of exciting the symptoms described in evidence; but were not referrible to any *particular* poison. Redness of the mucous membrane may be produced by cholera: in the *post mortem* examination of nearly seventy cases of cholera, has not observed the appearances described by Dr. Hurst, nor the blackish patches observed by witness. Witness is of opinion that deceased's death *was caused by poison.* Conceives that if corrosive sublimate had been the poison administered, it would (under the circumstance of the case) have been almost inevitably detected, either in the coats or contents of the stomach; it would have been thus detected the day after the death. It has been detected on the eighth day* (after administration, the patient having lived during that period). Is of opinion, that the solution of corrosive sublimate (in the pint bottle) could not have produced the symptoms and rapid death of deceased, even on the supposition that the bottle had been full, and its entire contents administered, in which case about eight grains† would have been given.

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* The metallic corrosives, (and indeed many other poisons), when existent at the time of death, in the coats or contents of the stomach, may be detected an indefinite period afterwards, although changed in composition. The compound formed between the animal matter of the mucous membrane and the peroxide of mercury in the case of the action of corrosive sublimate, resists decomposition for a very long period; the mercury, however, I have ascertained, is finally reduced in great measure to the metallic state, in which condition it should, of course, admit of detection. The period which elapses between the *administration* of the poison and *death* exercises, however, a material influence on the possibility of its detection, as after some time, the membrane, which has been the seat of the chemical action, is cast off by the process of sloughing; this process, however, often requires several days for its completion. I have seen the slough in part adherent where life was prolonged to the seventh day. Dr. Venables relates a case in which the metal was detected in the slough in a patient that lived eight days; it was to this latter instance, my mind was involuntarily directed in stating, that the poison has been detected on the eighth day, the *duration* of a case being the only circumstance recognized by medical jurists as influencing the detection of the mercurial salts when *they have produced corrosion.*

† This was the calculation of the moment, the exact quantity would have been 9.6 grs.

Mineral poisons frequently adhere to the coats of the stomach."

In seeking data for the determination of the fact of death by poison, the attention of the medical investigator must be directed, to a consideration of the functional derangements observed during life; the changes, whether vital, physical, or chemical, effectuated in the structures and fluids of the body; the possibility of detecting the offending substance; and such general circumstances in evidence, as are intimately connected with the strictly medical facts of the case. In addition to the foregoing, certain experimental investigations as to the effects on the lower animals, of suspected matters of food, &c., may (under peculiar circumstances) require to be instituted.

By the facts derived from one or more of those sources, our decision must be guided; and it becomes the duty of the medical witness to secure that none of the existent ones shall remain latent, from want of sufficiently minute and accurate investigation. The information derivable from chemical examination of the contents of the stomach, &c., although, of course, a most important element in medico-legal investigations connected with poisoning, does not carry with it that exclusive weight which is attached to it by those of the profession who are uninformed in forensic medicine; nay, further, although a positive decision may be occasionally arrived at from other single sources of evidence, the *chemical* examination *alone* cannot decide the cause of death. As an instance of sufficient evidence from a *single* source, the following may be adduced: A middle-aged man, about twenty minutes after drinking a basin of coffee, was seized with nausea, followed by copious bilious vomiting, cramps, coldness of the surface; to these untoward signs, in no long time, succeeded tightness of the throat, burning in the tract of the gullet, hoarseness, tenderness of epigastrium, injection of the conjunctiva, excoriation of the eyelids, pimples around the mouth, superficial ulcerations of the throat, cough, and tightness of the chest. After a time, these phenomena gave way to a

sensation of prickling in the integuments of the thorax, anæsthesia of the fingers and toes, well-marked partial paralysis affecting the forearm and inferior extremities, and general desquamation of the cuticle. Such a combination of symptoms could only be attributed to the action of *arsenic,* (which, it appeared, had been taken for suicidal purposes).*

In like manner, the vital and chemical alterations observable in the structures, *post mortem,* may be quite sufficient in some instances to determine the fact of death by a violent corrosive, independent of any *chemical* or other investigation.†

In the case which forms the subject of this paper, the decision was grounded on a conjunction of facts derived from the following sources:

1st. The symptoms considered in all their relations.

2nd. The morbid appearances.

3rd. Certain general circumstances, intimately connected with the medical facts.

I would, in the first instance, observe, that it will be probably conceded, that the symptoms in *both* individuals, were produced by the same cause, and may therefore be considered conjointly. An examination of those which appeared in evidence will suffice to show, that both as to their nature, combination, and general characteristics, they were in accordance with those of narcotico-acrid poisons in general, and in particular, of the special substance suspected by the medical witnesses to have been administered. Thus we have supervening, shortly after a meal, the phenomena of severe gastric inflammation, with others, indicative of disturbance of the functions of the nervous system; a

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* For an opportunity of observing this case I am indebted to my friend, Mr. Tagart, of this city, under whose care the patient had been placed.

† Cases of this kind are not uncommon; an excellent example, investigated by Drs. Mertzdorff and Staberow, the report of which is worthy of attention, as a model of a well-conducted medico-legal inquiry, is given in Beiträge zur gerichtlichen Medecin aus dem literarischen Nachlass des Dr. Mertzdorff, in Horn's Archiv. for May and June, 1823. It may be found also given *in extenso,* in Sobernheim's Handbuch der Praktischen Toxicologie, p. 170.

combination, which, so far as I am aware, has not been observed as the result of any natural disease which attacks a person previously healthy,* and terminates fatally in a very few hours. The only disease which presents a sort of general resemblance, is the malignant cholera. The difference between them are, however, sufficiently obvious, e. g. in the cases under consideration, the existence of burning in the mouth, throat, and tract of the œsophagus, preceding the vomiting,† the nature of the latter, the *relief* consequent on the evacuation of the stomach, the nature and existence of marked nervous symptoms during the primary stage of the disorder, the occurrence of death in little more than three hours, which is rare even in the worst cases of malignant cholera, and then, for the most part, unaccompanied by vomiting or purging; and, lastly, the non-existence of the epidemic in the country at the time, and the non-extension of the symptoms to any other individuals. The duration of the fatal case in itself excludes the idea of bilious cholera; while, the same criterion, the wholesome nature also of the aliment contained in the vessel, from which the plates were supplied, and probably the rapid commencement of the symptoms, repel the supposition, that the illness of the sufferers could have been owing to unsound food.‡

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* An attempt was made by counsel to show, that deceased had been in ill health; the sum of the evidence on this point was, that he "sometimes complained;" his having partaken, however, of rather a hearty meal on the day of his death, shows that he could not have laboured, at the time, under any serious acute disease of the digestive tube. One of the witnesses who saw him shortly before death, stated that "he was surprised to find him so ill, as he had been previously *healthy*." It was admitted on all hands that the survivor was in perfect health previous to that meal.

† In malignant cholera also, burning in the throat is only observed, as the result of the bilious vomiting in the stage of reaction.

‡ No very definite information exists as to the effects of decay in modifying the physiological qualities of those *vegetable* matters ordinarily used as food; in the case of decayed animal matter, the symptoms produced are usually those of bilious cholera, and seldom commence till a considerable period after the meal, and never terminate fatally in the short period of three hours.

Hence, from the *symptoms alone*, (viewed even as affecting but *one* individual), poisoning might have been inferred, if not as certain, at least, in the highest degree probable. In speaking thus, however, we presume the symptoms to be taken in combination and in all their relations; the necessity for which is too often overlooked by those who are unused to medico-legal inquiries, and who, in consequence, are apt to allow their conclusions to be overborne, by a series of objections urged against individual facts; a proceeding which, if admitted and carried out, might be employed successfully for the contravention of the most decisive proof, from all the various sources of evidence.* An objection was taken by the ingenious counsel for the prisoner, to the reception of a detail of symptoms by non-medical witnesses. It must, however, be recollected, that in the investigation of disease, the physician is obliged to rely, to a certain extent, on such histories, and frequently finds them sufficiently satisfactory. It would seem that in the public as well as private practice of medicine, all that should be required is, that the narrator be worthy of credit, and that sufficient care be taken to develope fully such information as he may possess; it will be then the province of the medical witness to judge, how far the circumstances detailed are in accordance with the known medical facts and principles, connected with the particular matter under inquiry. In reference to the cases which have been detailed, it has already been observed, that the symptoms enumerated by the ordinary witnesses are quite in conformity with those of narcotico-acrid poisons. Objections of the kind just mentioned, might possess some degree of force in *imputations* of poisoning.† In the present instance, however, the death of one of the individuals affected, affords a sort of *prima facie* evidence in

* Thus, if the argument be admitted that individual symptoms are liable to be confounded with those of disease, it must also be conceded, that poison found in a stomach might have been introduced after death; and so also, in reference to the other items of medical evidence.

† See a case related by Dr. Christison, Ed. Med. and Surg. Journal, vol. xxix. p. 19.

favour of the fidelity of the narrative of symptoms detailed in evidence; although the latter might have been more fully developed at the trial, as they were all entered at my suggestion in the brief.

The morbid appearances next demand notice. It has been stated, that even at the expiration of eight days after death, (seven after burial), the putrefactive decomposition was not considerable. I apprehend no considerable weight can be attached to this fact; the circumstances which modify this process, in cases of poisoning, not being well understood. It certainly has been frequently observed, that the bodies of those who have perished from the ingestion of vegetable poison, putrefy rapidly. This, however, is not by any means invariable; and, on the other hand, a mineral poison which has been frequently noticed as retarding or arresting the progress of decomposition, appears occasionally to exercise an opposite influence. Thus I had lately an opportunity of observing an undoubted case of poisoning by arsenic, in which putrefaction advanced in the entire body with singular rapidity.

With regard to the condition of the mucous membrane of the stomach, the appearances described by Dr. Hurst are sufficiently characteristic of intense inflammation, and precisely such as are frequently witnessed in irritant poisoning; the dark, brownish-red colour of the membrane, the extent of this appearance, and the presence of a notable quantity of viscid mucus, taken in conjunction with the symptoms during life, suffice to distinguish the appearances from those produced by pseudo-morbid alteration. I am disposed to view the black patches observed by myself as a specimen of the extravasation of altered blood, which so frequently results from the action of irritant poisons; they had just such an appearance as would be produced by the effusion of an exceedingly thin stratum of that fluid into the substance of the membrane; as they are not stated by Dr. Hurst in his evidence, it seems probable that they escaped observation in the first instance in consequence of the general dark-

red aspect of the mucous membrane, which was sufficiently dissipated by the commencement of putrefaction to render them obvious. These could not, according to my own experience, have been produced as the result of decomposition, nor by the gastric acids, although the latter may produce ramiform discoloration, from their action on the blood contained in the larger vessels, or a light-brownish one, of a more diffuse character, where the minute vascularity had been previously very considerable. My own observation leads me to doubt the very general connexion of softening of the mucous membrane and brittleness of the submucous texture, with the inflammation produced by irritant poisons. In the present, as in other cases, I found the membrane of natural consistence.* The possibility of the production by malignant cholera, of appearances similar to those detailed, even if admitted, would only militate against an opinion based on the morbid appearances alone, or as the chief ground of decision, and not against conclusions arising out of a consideration of all the facts of the case; it may be observed also, that appearances of inflammation of the stomach, when met with in that disease, most usually occur in the stage of reaction; they are of infrequent occurrence, and very probably often result from the violent stimulant remedies employed.† As stated in evidence, I have not

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* A good representation of the appearances met with in this disease may be found in Cruveilhier's Anatomie Pathologique.

† While these observations were in press, I had an opportunity of seeing a case of poisoning by arsenic bearing on this subject. There had been marked symptoms of gastritis during life; the lining membrane of the stomach presented generally the appearance of active inflammation; the consistence and adhesion of the membrane at the pyloric end was apparently greater than natural, large flakes being furnished on traction; it was only, however, in those parts where the inflammation was *most* intense, that softening existed; I have nevertheless seen the inflammation produced by irritant poisons, even when very intense, unattended by softening. I may also observe, that in the case just noticed, there was no mucus adherent to the membrane, although a good deal was diffused through the contents; the membrane, generally, was opaque, and apparently somewhat thickened.

met the appearances witnessed in the present case, after a tolerably extensive experience in the morbid anatomy of cholera. The symptoms, however, as we have seen, render any difficulties suggested on this point unimportant.

In concluding the notice of the morbid changes, I would observe, that the amount of evidence attainable as to their cause, or that of the symptoms, from the consideration of either separately, is enhanced in no small degree, by a combined study and comparison of both.

The last source of evidence of death from poison in the present case, was that derived from a consideration of certain general circumstances* connected intimately with the medical facts. These were :

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* Without pretending to define whether these circumstances are to be considered, critically speaking, as part of the *moral* or of *medical* evidence, it may be observed, that they are capable of having their full value developed by the *medical* witness only ; the investigation, moreover, of the nature of cases occurring in private practice, by reference to certain of these circumstances, (as in the case of epidemic disorders), would tend to place them under the head of medical evidence. Considerable advantages in a medico-legal point of view also result from the decided appropriation of the above class of facts, to the purposes of the medical witness, by furnishing him the means of giving a positive opinion, in cases which should remain otherwise doubtful. Dr. Christison, in his masterly treatise on poisons, classes them under the head of " moral evidence," contending at the same time, that they are capable of being handled by the medical witness only ; their arrangement, however, under this head, might possibly have the effect of deterring some from employing them, under the impression that they would not be admitted by counsel, as falling within the scope of medical evidence, and that to use them as elements of a medical opinion, would be to encroach still further on the province of the jury than the medical witness is ordinarily obliged to do ; if, however, the facts alluded to, be viewed, as strictly items of medical evidence, such difficulties could not long exist. The medical witness, in forming an opinion, should be allowed, therefore, to employ, without restriction, such facts as cannot be invested with their full value, without the assistance of medical knowledge. I should add, that I have been informed by a Crown lawyer, whose experience entitles his statements to much consideration, that the moral facts detailed in the text are, in his opinion, to be considered as the property of the medical witness ; whatever may be the practice of the criminal courts in this respect, it would appear, notwith-

1. That two individuals who were the *only* persons that had partaken of a *certain portion* of food, *the after-taste of which was acrid,* were seized shortly afterwards* with the symptoms already described.

2. Those who had *not eaten* of that *particular* portion, neither experienced any *disagreeable flavour* on their food, nor any *sign whatever* of indisposition.

3. The *gravity* of the two cases had relation to the *quantity* of the food of which the individuals had respectively partaken.

4. The *general mass* of food from which the *separate portions* had been served, was of wholesome quality.

The above circumstances are evidently in striking confor-

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standing, that the assistance which the resources of medical science afford, in determining the *administrator* of the poison, and the *intent*, has been as yet but little recognized by those engaged in the conduct of criminal investigations. Even under existing circumstances, it is of the utmost importance, that the medical jurist should have an opportunity of becoming acquainted, previous to the trial, with all the authenticated moral facts of the case on which his opinion is to be required; it can be only by an examination and comparison of these, with the medical facts already ascertained, that he can perceive in what respects the latter are defective, and be thus enabled to institute such additional inquiries as may be necessary; and I may add, that in the prosecution of such investigation it will frequently happen that new moral facts of some importance shall be developed. The adoption of this procedure, by furnishing the medical witness with the precise relation of all the facts, will save him much anxiety, and by rendering his conclusions more valid and decisive, will materially aid in forwarding the ends of justice. The necessary information is to be sought in the depositions and examinations placed in the hands of the legal officers, whose duty it is to arrange the evidence for trial. I feel happy in acknowledging the facilities afforded me in the present case by the politeness of Mr. Hamilton, the efficient Crown Solicitor for the North-eastern Circuit.

* The deceased was not seen for an hour after the meal; from the symptoms, however, described by himself in his letter to the apothecary, and from the gravity of his case when first visited, there can be no doubt his illness commenced seriously, soon after dinner; the peculiar impression produced on the palate, described by deceased as "a wild, sharp taste," corresponds to the burning and prickling in the mouth mentioned by M'Meighan; in this view of the matter, the symptoms of each commenced nearly within the same interval after eating.

mity with those which we should expect in a case where the noxious matter existed in a particular portion of food ; and when they are taken in conjunction with the evidence derivable from the symptoms and morbid appearances, must, I apprehend, be considered decisive. The want of any chemical or physical evidence of the appearance of the presence of the poison is, of course, explained by the free occurrence of vomiting, (the stomach having been found in fact, empty). Although, therefore, chemical or physical evidence, when obtainable, is highly important, taken as *part of the proof,* yet, in the present instance, I conceive it will be admitted by those qualified to form an opinion on such subjects, that any presumptions against the fact of death by poison, from the negative character of the chemical inquiry, are fully counterbalanced by the stringent nature of the *medico-moral* facts.*

In the investigation of the cause of death, in cases like the present, the medical jurist must ask himself:

1. Whether the medical facts, as a whole, are consonant with the phenomena of poisoning in general.

2. Whether they could be attributed to natural causes.

And by weighing the evidence in favour of each must form his decision ; if there be a strongly marked preponderance in favour of either, the opinion may be positive. Should the facts, however, be more evenly balanced, a restricted one may be required. It has been already shown, that in the case detailed, the available sources of information, militate strongly in favour of poisoning ; while, on the contrary, the idea of disease is decidedly repelled ; unless, therefore, we are required to concede, that at a time when cholera *was not epidemic,* this disease attacked two healthy persons, carrying off one of them in little more than three hours ; that by *mere accident* their symptoms commenced at the same time ; that these symptoms also *hap-*

* I must deprecate censure for the employment of the above term ; it is intended to distinguish the moral circumstances which legitimately constitute part of the groundwork of the medical witness's opinion as to the *cause of death,* from those the value of which must be determined by a jury, and which have reference to the *administrator* and the *intent.*

pened to be *decidedly anomalous;* that by a *singular coincidence* the individuals affected were *those alone* who had partaken of a *certain* dish, the gravity of their illnesses being in proportion to the *quantity each had consumed;* that the organic changes produced had not been in accordance with the effects of cholera; and lastly, that the *usual* laws of the epidemic had been in the *present instance reversed;* unless, I say, we should be required to admit this series of individually improbable, and collectively impossible occurrences, both science and common sense seem to require the opinion, that deceased's death was caused by poison. In a case of such responsibility as the present, I considered myself peculiarly fortunate in finding my opinion supported by medical jurists of such deservedly high character, as Professor Christison and my esteemed friend, A. Taylor, Esq., Lecturer on Forensic Medicine in the School of Guy's Hospital, who were kind enough to impart to me their views on the subject.

As to the *special* poison employed, the opinion given by me and embodied in the Crown counsel's brief was, that "the medical facts were more conformable to the supposition of vegetable poison and that *monkshood* was capable of producing the symptoms and rapid death observed." The probability of death having resulted from vegetable poison was inferred from the symptoms, and the fact, that in cases of very *rapid* death from the metallic poisons, the noxious substance is almost invariably capable of detection in the contents or textures of the stomach; thus had arsenious acid been administered, with the delicate methods of determining its presence now in existence, it could not have escaped discovery in the quarters just noticed; possibly, arsenious acid in solution might be an exception; the circumstances, however, of the meal preclude the idea that such solution could have been administered either at all, or in sufficient quantity to have caused the rapid death.* Similar reasoning

* The greens consumed by deceased (a small plate full) could hardly have imbibed sufficient of a solution of arsenic to cause such rapid death, unless the solution

applies to corrosive sublimate, either solid or dissolved, (in the former of which cases, the flavour of the food would have been so detestable, that it must have been at once perceived), and also to other metallic poisons. A consideration, therefore, of the medical facts leads to a conclusion that the poison was of an organic character. Of the animal poisons cantharides is the only one requiring allusion. In all the recorded cases of poisoning by this substance, death was much slower, physical indications also of its presence would most likely have been found in the stomach, (and perhaps its purchase proved).

Various circumstances, therefore, pointed to vegetable poison. My attention was drawn to *monkshood* as the special substance employed by a rumour prevalent amongst the peasantry in deceased's neighbourhood, that he had been poisoned by "*blue rocket.*"* I was led, by reflection on the nature of the symptoms, to the suspicion, that the plant so designated might be the *Aconitum napellus*, the flowers of which are well known to be blue. I ascertained this to be the fact by exhibiting to the

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were a strong one; it has been shown by Mr. Taylor (Guy's Hosp. Reports, No. 4), that arsenious acid requires to be boiled for *an hour* in water to obtain a solution including 20 grains to the fl. ounce. The records of medical jurisprudence I think will show, that arsenious acid is not often given in strong solution by the vulgar; in the many cases in which it has been given either in tea or coffee, the arsenic has been either not at all dissolved, or in very feeble proportion, as the presence of organic matters, decidedly diminishes, and, under some circumstances, destroys its solubility, (Taylor, loc. cit.) I may mention, while alluding to this subject, that the reverse obtains in the case of sesqui-sulphuret; this compound, which is almost totally insoluble in water, is taken up in very notable quantity, by astringent vegetable solutions; thus I find that a current of sulphuretted hydrogen will cause no precipitate in a strong infusion of tea to which a solution of arsenious acid has been freely added. It is not improbable also, that even in case of arsenic administered in *solution*, it may be found by the new methods, not only in other quarters, but also combined with the coats of the stomach in appreciable quantity. For an interesting account of the combination of arsenic and animal matter, I would refer, to Dr. Bunsen's Papers in Poggendorf's Annalen, vols. xl. and xlii.

* The genera of plants ordinarily termed "rocket," are the Hesperis and Eruca belonging to the natural family of cruciferæ.

witnesses a drawing, and carefully preserved specimen of the plant in flower, which was at once recognized by them as the "blue rocket," and which it appears is well known amongst the peasantry and others in Monaghan and the neighbouring counties. I have been also informed by a medical friend, that he is personally cognizant of the fact, that in the county Fermanagh the "blue rocket" of the vulgar is the *Aconitum napellus*. The symptoms in deceased were exactly in accordance with those detailed in works on toxicology, as having being produced by the plant: some of these are rather peculiar; as for instance, the effects produced after *a short interval* on the tongue, mouth, &c.; the sensation also of swelling of the face, the tingling of the skin.* As the rest of the symptoms, however, are common to many of the narcotico-acrid poisons, I limited myself (in giving a written opinion) to the statement, that monkshood was adequate to their production.

The judgment of the jury, as to the individual who administered the poison, and the intent, even if based on the purely moral circumstances, it can hardly be doubted was a just one. The absence of any proof of the purchase or possession of poison, on which some stress was laid by newspaper writers, was considered by the ingenious counsel for the prisoner of so little consequence after the delivery of the medical opinions, that it was not alluded to; evidence as to the growth of monkshood in the prisoner's neighbourhood, and of a general knowledge amongst the peasantry of its poisonous nature, had been collected, but was not thought necessary to be adduced at the trial. I need hardly observe that proof of the purchase of poison does not legitimately constitute any part of the groundwork of the medical witness's opinion as to the *cause of death*, although it, or its absence, may possibly assist him when chemical evidence is wanting, in approximating to the *particular substance* employed.

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* See Christison on Poisons, and Mr. Radford's Cases, Lancet, 1836-7, vol. ii. p. 925.

I would however add, that in the present case, as in many other instances of poisoning, medical evidence was capable of affording information both as to the giver and the intent.* Thus the medical facts prove, that the poison was administered at dinner; and if also given in the morning in tea, as afterwards alleged, which is highly improbable, could not have been in a poisonous dose. On the admission then, that the poison was administered at dinner, the circumstances of the case decide the individual by whom it was given, and when the giver of poison is ascertained, the intent is, unfortunately, too generally obvious.† It has been, however, occasionally pleaded in criminal trials that the poison was given by accident; in the present case, such a plea was incompatible with the medical facts. The poisonous matter could not have been present in the pot in which the greens were boiled without contaminating the whole contents of the vessel more or less, by extraction of its soluble parts, or by admixture, and thus either imparting to them noxious properties, or if the poisonous energies of the substance were destroyed

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* See an able exposition of this branch of medico-legal science, and of the value of evidence derivable from the different sources of medical inquiry as to the fact of death by poison, in Professor Christison's work on Poisons, 3d edit. p. 35, et seq., and p. 83.

† The *intentional* administration of poison does not necessarily amount to an *attempt to murder*. A case was tried in London not long since, before the Recorder, in which a waiter at an inn administered two scruples of cantharides mixed with coffee, to three persons, one of whom was seriously affected; as it was proved that he was on good terms with them, and had given it by way of joke, its administration was held to be a *constructive assault*. In the case of Alcorn, noticed in the beginning of this paper, (the poison suspected being tartar emetic), the crime of which she was found guilty was *the administration of a deleterious substance with intent to do grievous bodily harm*. (Syme's Justiciary Reports). A case occurred a couple of years ago in the county Longford, in which a butcher smeared some pickled meat purchased by an officer, with a large quantity of a vegetable powder, which I found to possess the characters of jalap, a substance which ranks amongst the acrid poisons; the case was tried on grounds quite foreign to that of assault or attempt to murder. Probably, the *nature* of the poison, and the *quantity administered*, (when the latter can be proved), may form elements in the determination of the intent.

by decoction, rendering the *entire mass* of food *innocuous.* Medical evidence could have shewn, therefore, that the poisonous matter must have become admixed with the food on the plate, thus leaving the determination of the question of its *accidental* presence there, for the jury, unembarrassed by much difficulty. In the present case, no inquiry was made of the medical witnesses relative to those circumstances which I have just noticed as capable of pointing out the giver, or the intent, these latter having been determined by the jury, solely from the moral facts. The prisoner was found guilty, and previous to execution, confessed that her husband had been poisoned by the *root* of "blue rocket," which she said, had been mixed with pepper by an acquaintance of hers, and sprinkled over the greens her husband had eaten. She denied, however, any knowledge of the transaction at the time of its occurrence. She also stated, in the first instance, that it had been administered the same morning in tea.

The general acquaintance of the peasantry with this plant is to be traced to the circumstance, that its flower formerly constituted one of the elements of decoration, in party processions, and also to the extensive employment of its root by the northern horse-jockeys, who have attached to it the conventional designation of "the root." These persons resort to it largely in the operation of "figging," which consists in the introduction of a mixture of the bruised root of the plant and chewed ginger, into the horse's anus, in order to render him lively, previous to sale, a result which it effects by its irritant action; the consequences of this process are, however, occasionally untoward, as the animal is not uncommonly affected by twitching, and partial paralysis of the hinder extremities. The irritant effects are generally combated by the introduction of a mould candle into the anus. The above use of the plant is so well understood by the horse-jockey, that a piece of "the root" is carried in his waistcoat pocket, as a sort of indispensable implement of the trade. I found, also, by inquiry from the witnesses, that

they were aware that the plant is poisonous, and that "it would blister the mouth if chewed;" that it grows commonly in the gardens near deceased's residence; and that they had heard of individuals in their county to whom it had proved fatal. I also learned that *deceased* was acquainted with its properties, having informed one of the witnesses about three months before his death, that he had known it prove fatal to a horse-jockey, who having chewed it in mistake for ginger, was taken ill, and died the same night. A gentleman resident in the county Monaghan has also mentioned to me an instance which occurred in his neighbourhood, in which a horse-jockey's child, who was in the habit of taking ginger out of its father's pocket, unfortunately on one occasion encountered "the root," and having eaten it, "died the same night in great pain." The foregoing details will show, that the employment of this plant for homicidal purposes might, consequently, be expected. Dr. Young, of the Monaghan Infirmary, whose kind assistance in the investigation of the case detailed in this paper, I am happy to acknowledge, and to whom I owe some of the above particulars, witnessed the following case of poisoning, in which there was the strongest reason to suspect felonious intent, and *aconite* as the substance employed.

An individual who had lived on very bad terms with his family, after breakfasting one morning on porridge, left home to go to a town two miles and a-half distant; on his way (about half an hour after breakfast) he was taken ill, and was afterwards seen by a practitioner of the neighbourhood, who found him labouring under severe pain in his mouth, throat, and belly, violent vomiting and purging, restlessness, and partial paralysis of the lower extremities; he died in about four hours from the time of the meal. The *post mortem* examination, and chemical inquiry, were conducted by Dr. Young. The œsophagus presented variable degrees of redness; the lining membrane of the left end of the stomach was irregularly red and softened, so as to be easily scraped off by the nail, viscid mucus covered its whole surface. The organ was empty as were also the intestines, which

presented somewhat similar appearances; the brain and its membranes more vascular than natural; the vessels of its surface distended with dark-coloured blood; lungs engorged; the centre and lower part of left lung presented two masses of extravasated blood, one of which was of considerable size, the blood apparently incorporated with the substance of the lung, and perfectly black. On careful analysis no trace of mineral poison was found in the porridge; it contained, however, a great number of a very small, black, and somewhat kidney-shaped seeds, and also a few small slices of vegetable matter of a dark colour. These, when chewed, were *at first* tasteless, in about four minutes afterwards, however, a very unpleasant prickling heat, sense of tingling and numbness in the lips, tongue, and mouth, with considerable salivation, succeeded, and after some time, a sense of numbness in the *face;* these symptoms continued for some hours.

Through the politeness of the coroners for Manchester and Leicester, and of my friend, F. Fullagar, Esq., of the latter town, I have obtained the following particulars of the two cases of death from monkshood, noted in the parliamentary return; both of them occurred in the month of March, when the plant sprouts up like young celery, for which it was in both instances mistaken; in both also the root was the part eaten. In Mr. Fullagar's case the sufferer, a man, aged 56, had died before his arrival; the symptoms ascertained were heat of tongue and throat, which supervened during eating, vomiting and purging, sensation of swelling in the throat and over the body generally, subsequently lockjaw and insensibility, with slight convulsions before death, which took place in an *hour and a quarter* from the period of the meal; the quantity eaten was "a handful;" his child also partook of the root, but found it so acrid that it ate but little, vomited well, and recovered.

The Manchester case was that of a boy seven years old; the symptoms ascertained were, a remarkable *sensation of swelling of*

the face, clenching of the hands, and convulsions, which became very violent previous to death, *which occurred in two hours;* the quantity taken not ascertained; in neither case was a post mortem examination had. A French case of poisoning by the extract, which proved fatal in four hours, is given in Dub. Med. Press, (vol. ii. p. 66). The dissection showed congestion of the brain and its membranes, also of the lungs; the right cavities of heart distended, with blood resembling black currant jelly; the stomach presenting numerous *brown spots* towards the œsophageal orifice, and the liver and spleen gorged with dark blood. The foregoing cases are sufficient to show the energetic nature of this poison. The root, so far as has been observed, is the most active part, and it would appear, from what has been detailed, that, unlike hyoscyamus, season does not appear to impair its poisonous virtues. The seeds (from their taste) are probably very active, as also the flower.* As to the quantity necessary to cause death, I find it stated, that one drachm of the root has proved fatal. All the species of aconite are deadly; the A. ferox is, however, by far the most energetic. The Hindoo poison, *meet' ha zuhur* or *meet' ha bikh*, sweet poison, is the root of this plant; its taste is sweetish, succeeded by acrimony; nine grains of it, cut into small pieces, and given to a young cat, gave rise to profuse salivation, violent convulsions, and death in four hours; the stomach being found uninflamed.† The plant itself has been employed by the native Indians for poisoning water tanks, in order to impede the progress of an invading army.

I shall feel gratified, should the foregoing narrative assist, even in a feeble degree, in directing the attention of the Profession to the investigation of the sources which furnish the elements of a medical opinion in questions of poisoning, and of

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* Plenck (Toxicologia, p. 169) says, "septem flores napelli in acetario comesti hominem peremerunt."

† Transactions of the Medical and Physical Society of Calcutta, vol. ii.

placing *on record* the various interesting medico-legal cases and inquiries which are constantly occurring in practice.*

XX.—*A brief History of the Epidemic Small-pox, which visited Dublin in the Autumn and Winter of* 1839-40; *a Paper read before the Dublin Obstetrical Society, on the 7th of January*, 1841. By Dr. Ringland, A.B., M.B., T.C.D., &c. &c.

Although so much has been already written on the subject of small-pox, and so little can have escaped the observation of those authors who have already investigated it, that it must appear almost a work of supererogation in me to add a single word; yet the history of epidemic diseases affords such scope for observation, that I have been induced to write a brief account of that of the small-pox of the autumn and winter of 1839-40; and I trust that the importance of the subject-matter may be deemed a sufficient excuse for the imperfect manner in which it has been executed. It is not my intention to occupy the valuable time of the Society at present, by entering into all the abstract reasoning and theories which might be elicited from the history of this epidemic, but to abide strictly by the motto of Boerhave, "Simplex sigillum veri;" to tell a plain unvarnished tale; and to state nothing but such *facts* as came under my own observation. The distinct species appeared to me to be that which prevailed in the neighbourhoods of the metropolis in which I visited, the quays, the vicinity of Smithfield-

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* An authentic account of trials involving medico-legal questions, such as that furnished by the Old Bailey Sessions Papers, would be of much advantage to forensic medicine, and would save some trouble and unnecessary inkshed on the part of newspaper critics (general and *medical*), who are to be found industriously impugning statements *never uttered* by the witnesses, and occasionally superadding, for the enlightenment of the public mind, certain *original doctrines* and "*established facts*" relative to the evidence required in charges of poisoning.

market, and that portion of the Liberties situated near St. Patrick's Cathedral, and was of a very modified form. The confluent species, although in itself extremely violent, was not of a fatal nature. The sequelæ of both were, however, tedious in their duration, excepting in two cases which were fatal in their result.

The train of symptoms which ushered in the attack of the distinct form was rigors, and sense of weariness, followed by flushings, nausea, violent headach, pain in the back, and incessant thirst. Obstinate constipation was always present; the pulse was extremely rapid, and the eyes red and swollen. Tongue furred. At the expiration of from 72 to 84 hours from the first rigor, a thinly scattered eruption of small, elevated, red spots appeared on the face, chest, and neck, gradually extending over the whole body, not excepting the mouth and fauces. The respiration now became much affected, deglutition difficult, and the saliva viscid, and very much increased in quantity, whilst at the same time the tongue became cleaner, and the pulse descended below a hundred. The pimples rapidly enlarged, and at the expiration of the third day from their first appearance, were filled with a straw-coloured fluid, and had now become vesicular. The vesicles were depressed in the centre, and surrounded by a very extended areola. At this time the face was swollen, but never throughout the whole period of the disease to any considerable extent. The process of maturation gradually progressed, and the pustules became filled with a thick yellowish pus. This process was completed about the sixth day; and on the eighth from the first appearance of the eruption, or the eleventh from the commencement of the disease, the inflammation began to subside, the pustules to dry up and form scabs, and about the fifteenth day from the invasion of the attack, the patient was convalescent.

The treatment which in my hands proved most useful was very simple. Bleeding, when the fever ran high, purgative enemata; these I consider preferable to medicine administered

by the mouth, from the rapidity of their action; and saline effervescing draughts. I paid particular attention to ventilation and cleanliness, as far as was practicable in dispensary practice. I was careful in my injunctions to keep the extremities warm, but the body cool. This was the whole treatment I found necessary, excepting in one or two cases in which the irritation during the stage of maturation ran high; this was completely reduced, and refreshing sleep procured by the administration of a few grains of Dover's powder. The symptoms, and plan of treatment in all the cases which came under my observation at this period, were so similar, that it would be uselessly occupying time to particularize them all. I shall, therefore, without further delay, proceed with the description of the confluent form.

The fever which ushered in the attack was of an extremely violent nature, in one case attended by delirium, and in all by great nervous excitement. The countenance was haggard, and in every case that I attended, the appearance of the eruption was protracted to the fifth day from the inroad of the fever. With these exceptions, the disease in its commencement followed the same course as the distinct form. The eruption became vesicular on the third day from its first appearance, but the vesicles did not fill up as well, and bore a flattened appearance. At the termination of the fifth day, or beginning of the sixth, the *pustules*, which contained a thin, sanious fluid instead of pus, ran together, forming large patches of eruption. During the whole period of the eruption, there was no appearance of an areola, but a whitish-yellow, doughy appearance of the skin, in all the intermediate spaces: even in some parts of the body, where a few of the pustules were distinct, as on the arms and legs, there was no areola. Dyspnœa and difficulty of swallowing were now excessive, and hoarseness so great as almost to preclude utterance. Extreme swelling of the face and eyes had also prevented the patient from seeing. Scabbing did not commence till the ninth, or even in some cases till the tenth day of

the eruption. The scabs were of a dark-brown colour, and extremely fœtid in odour. The fever, which had subsided in a great measure, though it had not altogether abated on the first appearance of the eruption, now was renewed with almost redoubled violence, characterized by intolerable headach, with throbbing of the temporal arteries, diarrhœa, intolerance of light, foul breath, in some measure resembling mercurial fœtor; extremely fœtid discharges, and red-brown tongue, skin dry and hard, incessant thirst, mouth parched, and pulse hard and rapid. The abdomen was totally unaffected by pressure, nor could I detect any abnormal condition of the lungs. The blood, when drawn from the arm, was buffed and cupped. The treatment which I adopted was in the first instance similar to that used in the distinct form. Bleeding, purgative enemata, saline effervescing draughts, strict attention to ventilation and cleanliness, and keeping the body cool, and extremities warm. The inhalation of steam I found particularly serviceable in relieving the sore throat. A darkened room was absolutely necessary to the comfort of the patient. Acidulated barley water, or cream of tartar water, was extremely grateful to the patient. When the secondary fever set in, a copious bleeding gave much relief. Leeches to the temples, together with cold lotions and the cold douche, had, however, to be employed in the great majority of cases, and in some cases to be renewed in a few hours to relieve the headach. The diarrhœa not yielding to chalk mixture with opium, nor to hydrargyrum cum creta with Dover's powder, was successfully treated with starch enemata, followed by a suppository of two grains of watery extract of opium. A grain of the sulphate of quinine, with an ounce of infusion of gentian, was of much service in the early stages of the secondary fever, used every third hour. On the fourth or fifth day, symptoms of sinking set in; and in three cases, the pulse having come down to about sixty, being small and weak, and moaning being constant; the patients however, perfectly collected. Camphor mixture with Hoffman's anodyne liquor, wine or brandy,

and beef tea I used freely in this stage. In one case, on the fifth day of secondary fever, a violent erysipelatous eruption assailed the right leg and thigh, rapidly extending over the body, the greater part of which was covered with it. This was attended by rapid sinking. The attack yielded to tonics, and to stimulants largely employed for six or seven days. On about the twentieth day from the commencement of the disease, large scabs began to fall off, and at about the twenty-second the secondary fever had subsided, and the patients were convalescent. I should, perhaps, here mention that all the patients I attended had been vaccinated in infancy, but excepting in three cases, I could not ascertain where performed, nor with what accuracy.

I shall now draw attention to the sequelæ to which I have already alluded, as attendant on this epidemic; and, perhaps, from their importance, it might be advisable to enter into the detail of each individual case, at least of those which are of most interest.

In the first instance, then, to proceed with the consideration of the two fatal cases.

On the 5th November, 1839, I was requested to see Mary G——, æt. 22, residing on Sir John Rogerson's-quay, who had been ill for some days. To enter minutely into her case, prior to her convalescence from the attack of small-pox, would be to waste time, as it corresponds in every respect with what I have already described; suffice it to say, it was one of the worst cases of confluent small-pox I had ever attended. On the 23rd November she was perfectly recovered from the disease; and as the distemper still raged in her family, I suggested her removal from the house. She accordingly went on a visit to a sister who lived near Bray. On the 28th, when visiting the other patients of the family, I was surprised to find she had returned home that morning, alarmed with the idea that she had gotten a relapse, having been attacked on the previous day with rigors, headach, restlessness, and great depression.

She had constant nausea, intolerable thirst, feet cold;

tongue loaded, dry at the point and edges; countenance anxious; slight tenderness of abdomen to pressure. Bowels not freed since she had gone to the country; urine scanty, and high coloured; *intense* pain in the right shoulder, aggravated by the slightest pressure, or movement of the joint, which was red and swollen. The elbow joint on the same side also slightly sensitive to the touch, but can be moved freely. Pulse 80, hard and compressible.

Enema purgans stat. Lotio frigida fronti. Embrocationes calidæ cruribus.

℞ Mist. Camph. Aq. Acet. Ammon. āā. ℥ iv.
M. Sumat coch. duo ampla 4tis horis.

℞ Submur. Hydrarg. gr. i. Pulv. Opii. gr. ¼.
M. Fiat Pil. sumend. 4tis horis intermediis.

Evening Visit.—The redness and swelling increased. Pain in elbow joint equally violent with that of the shoulder. Had wandered a good deal since last visit. Bowels twice freed by enema; tongue as in the morning. Pulse 120, hard and compressible.

Hirud. xviii. partibus dolentibus. Continuentur alia.

29th. The erysipelatous blush extended over the whole arm, axilla, and back of shoulder; incessant moaning; deglutition difficult; delirium through the night, but now answers questions distinctly and collectedly. Total absence of sleep; feet cold; cold perspiration over the body; bowels freed once, unconsciously. Pulse small and rapid, barely perceptible.

Continuentur Pilulæ 3tis horis.
℞ Infus. Gentian. ℥ iv.
Mist. Camph. ℥ iii.
Spiritus Ætheris Nitros. ʒ iii.
Syrupi Zingib. ʒ v.
M. Sumat coch. duo ampla 3tiis horis.
Vini rubri ℥ vi. in die.

Died at 7 o'clock this evening. Had been in a state of coma for some hours previous. There had been no sense of fluctuation in the affected limb at the last visit.

Eliza G——, æt. 19, having passed through a most violent and dangerous attack of small-pox, of which the secondary fever was attended by erysipelas of the leg and thigh—the case already alluded to—was convalescent on the 29th November, the day on which her sister, the last patient, died. Having insisted, against the advice of her friends, on attending her sister's funeral, on the 2nd December, she was attacked on the following day with nearly a similar train of symptoms, the left ankle joint being the part affected.

A cold perspiration throughout the day; great difficulty of breathing; bowels obstinate for some days; tongue white, furred in the centre, red at the point and edges. Pulse 140, hard and full. Ankle red and swollen, and exceedingly tender to the touch; urine in small quantity, depositing an orange-brown sediment, and then becoming of a natural colour.

Enema Purgans statim. Venesectio ad ℥ xii. Haust. effervescent. 2dis horis.

℞ Sub-mur. Hydrarg. gr. xii.
Pulv. Opii. gr. i.
Pulv. Jacobi veri, gr. vi.
M. Divide in Pil. vi.
Sumat unam 2dis horis.

4th. Constant screaming; convulsions at intervals throughout the night; sordes on teeth and gums; involuntary stools; total retention of urine. I drew off a large quantity by means of a catheter, (this was fœtid and high coloured). She is quite conscious; intolerable pain of ankle; erysipelas extending up the the leg; the ankle of right side slightly sensitive, but no appearance of redness nor swelling. Pulse 70, small and weak.

Hirud. xii. parti dolenti. Enema Amyli stat. Ext. Opii. Aquos. gr. iii. pro suppositorio.

℞ Hydrarg. c. Creta, gr. viii.
Pulv. Doveri, gr. vi.
M. Divide in chart. iv. Sumat unam 2dis horis.
Omitt. Pilulæ.

℞ Sulph. Quininæ, gr. xii.
Infus. Gentian. Infus. Rosarum, āā. ℥ iv.
M. Sumat coch. duo ampla 2dis horis.
Vini rubri ℥ viii.

Evening Visit.—Appears rapidly sinking; screaming has given place to moaning; diarrhœa considerably abated; lies constantly on the back; is insensible to pain on touching the ankle; pulse 60, merely perceptible.

Contr. mist. vinum. pilulæque. Omittr. alia.

Died about three o'clock the following morning; did not awaken from the state of unconsciousness into which she had previously fallen.

In neither of the preceding cases was I permitted to make a *post mortem* examination.

On making inquiries among the friends of the two former patients, I learned that Mary, the first-mentioned sister, had on the day before she left town, visited a friend, then an inmate of one of the lying-in hospitals of the city, where they understood many of the patients had died of a similar affection in an inconceivably short time. I do not take it on myself to say whether the disease was communicated to my patients through this channel, or whether it was consequent on the variolous affection.

I am induced to bring these two cases before the Profession as they are interesting examples of diffuse disease in connexion with the variolous affection.

The following cases will exemplify an affection which I observed in a considerable number of instances at the time of which I write, and which was remarked by other medical men to whom I spoke on the subject. It appeared closely analogous to sciatica, and attacked promiscuously young and old, the

well clad and the badly clad, and those attacked with the mild or the more formidable form of the primary disease.

James F——, æt. 5, who had laboured under a very modified form of distinct small-pox, was attacked on the 10th of November, the seventh or eighth day from convalescence, with acute pain in the posterior part of the right thigh, extending down to the knee, but which was not much affected by pressure or motion. There was neither redness nor swelling. He complained of acidity of the stomach; bowels confined; tongue white; pulse natural. His bowels having been freed by means of carbonate of magnesia and rhubarb, and the thigh rubbed with compound camphor liniment, the pain yielded, and he was perfectly recovered in five days.

Thomas M——, æt. 16, convalescent from a mild form of distinct small-pox, was attacked on the 1st of December with intense pain down the right thigh. For this he did not employ any remedy for three or four days, when he observed great wasting of the limb; bowels were very confined. The treatment employed in the last case afforded no relief. Sinapisms were then applied to the painful limb, and turpentine enemata administered every eighth hour, after the plan suggested by M. Ducros for the treatment of sciatica. He was completely free from pain after having followed this plan of treatment for seven days.

Catherine A——, æt. 12, had recovered from a most severe attack of confluent small-pox, about four or five days, when she was attacked on the 8th of January with very acute pain down the left thigh, in the course of the sciatic nerve. There was no swelling, nor redness. She was first treated with purgatives, sinapisms, and frictions with stimulant liniments. These seemed but to aggravate the disease. The spirit moxa was then employed without benefit. Turpentine enemata, each containing an ounce of spirit of turpentine, every eighth hour, and half-drachm doses of turpentine in almond emulsion, administered by the mouth every fourth hour, were then had recourse to. To

this treatment the pain slowly yielded, after its employment for six days.

To enter into the detail of all the cases of this nature that I met with would be too tedious; suffice it to say, that turpentine administered by the mouth in small doses, and in the form of enemata, mastered this tedious and unpleasant affection, in all those cases which had not yielded to the more simple treatment used in the first case quoted.

That the distinct form of small-pox will communicate the confluent species is, I conceive, fully proved by the following cases:

William A——, æt. 10 years, was attacked with distinct small-pox, of a very mild form, about the middle of November, which ran its ordinary course. On the 15th of December I was requested to see his sister, Catherine, the patient whose case was last described, and who was closely confined to the house, I might almost say, to the room in which her brother lay, the neighbours threatening to beat her if they found her out spreading the contagion. She was thus exposed to no infection, but that derivable from her brother, yet still she was assailed by one of the most violent attacks of the confluent species I had almost ever witnessed.

I shall now detail a case, which I consider of much importance, as it goes far, in my opinion, to clear up a point of great obscurity hitherto, and which was very lately under discussion by the Profession, I mean the necessity by re-vaccination.

In January last, having been in attendance on a family consisting of thirteen children, two of whom were labouring under an attack of small-pox, and all of whom had been vaccinated in infancy, I resolved on re-vaccinating them all in succession, dreading lest the disease might assail any of them. Having but a small quantity of vaccine matter, I was enabled to vaccinate but the two eldest. Of the success of the original vaccination of the elder of these I could ascertain nothing to be depended on;

but with regard to that of the younger, I learned she had not been vaccinated till she was upwards of three years old, and that it succeeded so much to the satisfaction of the operator that he vaccinated two younger sisters from the vesicle which had formed, and that it had succeeded, the mother understood, equally well in both instances.

Now, here was a fair case for experiment; and what was the result of the re-vaccination? It succeeded to my utmost wishes in both the cases first operated on. From the younger of these I re-vaccinated all the other members of the family; in these it succeeded perfectly in but two instances, one of them, one of those who had been vaccinated in infancy from the second eldest. To further test the value of this re-vaccination in the last mentioned case, I vaccinated two children that never had been vaccinated before from this patient, and in both cases it succeeded perfectly.

BIBLIOGRAPHIC NOTICES.

Descriptive Catalogue of the Preparations in the Museum of the Royal College of Surgeons in Ireland. By John Houston, M.D., M.R.I.A., Curator of the Museum, &c., &c.

The Museum of the Royal College of Surgeons in Ireland is justly celebrated for the number and value of its preparations, and the science and skill which Dr. Houston has exhibited in their classification and arrangement, but, until the publication of this descriptive catalogue, its contents were with difficulty available to residents in Dublin, and were entirely useless to strangers. The first part of Dr. Houston's catalogue was noticed in the sixth volume of this Journal, and consequently we need not now revert to its great and acknowledged merits. Indeed the College of Surgeons may be justly proud of the merits of the two first Curators of the Museum, which was commenced by Mr. Shekleton in 1820, and had in 1824 already attained to a considerable degree of excellence, when that able and indefatigable surgeon was prematurely snatched from the field of his labours, and left behind him a blank which we, in common with the rest of the Profession, despaired of seeing suitably filled, for it seemed in the highest degree improbable that another could be found posessed of equal zeal and industry. The College very wisely resolved to choose Mr. Shekleton's successor by a *concours*, in which the candidates were required to produce proofs of their skill in making preparations, and the result of the examination was the appointment of Dr. Houston, who has ever since continued to discharge the duties of Curator of their Museum,—a museum which Tiedemann and Jules Cloquet have pronounced in our own hearing, as one of the most valuable in Europe. The number of the preparations is very great, and the amount of Dr. Houston's labour may be inferred from the fact, that four-fifths of the whole collection are the work of his hands. The arrangement of

the descriptive catalogue is so complete, that every person engaged in investigating the morbid anatomy of particular organs, can in a moment ascertain what amount of assistance he is likely to receive from an inspection of this museum, and we venture to say, that no one who enters seriously into such subjects, will fail to derive great instruction from the department of the museum which may include the particular objects of his study. The only thing which strikes us as a faulty in Dr. Houston's work, is the name, which is calculated to mislead those who have not seen the volume, and make them conclude, that the "Descriptive Catalogue" can be only used with advantage by actual visitors of the described collection, but such is not the fact; for even if the Museum were destroyed the work would be of great value, containing, as it does, just and lucid pathological views, and, in many instances descriptions so perfect, that the reader scarcely requires a view of the preparation to aid him in forming a true and correct idea of the specimen portrayed. It has struck us on carefully perusing the volume and comparing it with the preparations, that Dr. Houston everywhere displays, not merely an intimate knowledge of his subject, but a profound originality in his views, which imparts to his work a very high degree of interest, for every page exhibits not merely proof of labour, but marks of genius; we have thought ourselves bound, in justice to Dr. Houston, to say thus much concerning the general merits of the volume before us, of which, however, we find ourselves quite unable to offer an analysis, as its contents are, for obvious reasons, not capable of condensation; indeed, how select, where every subject is treated with equal fulness and propriety, and where every section is equally clear, concise, and judicious? In order, however, to give our readers some idea of Dr. Houston's style, we have selected the following extracts:—

"A. *a.* 35. Two healthy tongues extirpated by evil-disposed persons, during the life-time of the sufferers, with a view of preventing their giving evidence at a criminal trial.

"A gang of ruffians waylaid the unfortunate men, threw them down, kneeled on their chests, and squeezed their throats, so as to make their tongues protrude from their mouths. This being effected, the tongues were laid hold of, pulled forcibly forwards, and cut out from the root, by a short sharp curved weapon, like a gardener's knife. The victims of this atrocious deed recovered without ligatures to stop bleeding, or other special surgical treatment; and regained, afterwards, sufficient power of speech to convict and bring to punishment their assailants."—p. 6.

"A. *b.* 90. Ulcer in the pyloric extremity of the stomach. The case was that of a middle-aged man, who, after labouring long under caries of the spine and cough, died suddenly, without having exhibited any previous symptoms of visceral disease. After death, some of the contents of the stomach were found in the cavity of the abdomen, and the peritoneum presented the marks of acute inflammation. The preparation shows an ulcer in the stomach about an inch in diameter, with a circular, well defined, thickened margin, and a hole on the peritoneal surface of smaller dimensions, through which the contents had been effused. The ulcer is evidently one of long standing, and it said to resemble that found in the stomach of Buonaparte."—pp. 13, 14.

"A. *b.* 91. Ulceration of the stomach. A young lady, aged eighteen, who in youth enjoyed excellent health, became, about a year before her death, pale, thin, and chlorotic, without, however, complaining particularly of the stomach. She was suddenly seized with coldness, collapse, and excruciating pain in the abdomen, confined at first to the epigastrium, and thence rapidly spreading over the whole cavity. The pulse became almost imperceptible, the abdomen swollen, and tympanitic, and death ensued within twenty-four hours from the commencement of the attack. The preparation shows two ulcers in the lesser curvature of the stomach, near the pylorus. Both are oval-shaped, and rather more than half an inch in diameter. Through one, the contents of the stomach escaped, causing acute peritonitis; the other—that nearest to the attachment of the lesser omentum—was closed in by adhesions contracted to the peritoneum, and neighbouring parts, so as to prevent all danger of extravasation."—Ibid.

" A. *b.* 92. A girl about twenty years of age, fat, and apparently healthy, was suddenly seized abont midnight with pain in the epigastrium. At seven next morning, she was found with swelled and tense abdomen, indistinct pulse, cold and clammy extremities, retching without vomiting, and in great agony; she died before noon—less than twelve hours from the first complaint of pain. On examination, the peritoneum was highly inflamed, and partly filled by the contents of the stomach. The preparation shows an ulcer in the stomach, through which its contents had been discharged. It is oval, defined at the margin, and three quarters of an inch long: the extent of the perforation is greater on the mucous than on the peritoneal surface. At a short distance from it, may be seen the cicatrices of two former ulcers, which had never given rise to any obvious symptoms. The stomach at these points is thinned, the mucous membrane smooth, and destitute of villi and glands."—Ibid.

" A. *c.* 563. This preparation is of singular value in pathology. It consists of a piece of small intestine, about fifteen inches long, whether jejunum or ileum cannot now be determined, expelled *per anum*, as the result of an intussusception. There can be no possible doubt that the slough consists of the original bowel, as all the textures, of which the tube is comprised, are traceable in the preparation.

The patient, a female, was relieved, at the time, by the expulsion of the deadened portion of the intestine, and lived for years after; but, being lost sight of, no record of subsequent events could be obtained."—p. 77.

" B. *c.* 153. Aneurism by anastomosis, removed from the fore-part of the leg by Professor Harrison. There are three preparations illustrative of the affection, viz.—the morbid growth, injected; a drawing of the limb, and of the recent appearances on dissection; and a cast of the tumour before operation.

" The patient was a female child, nine years of age. The tumour, which had been growing from birth, was situated on the upper and anterior part of the tibia. It was very prominent, and about the size of a large plum. The cuticular covering was every where perfect, except at the very point of the tumour, where it was somewhat thickened and scaly. The colour of the most projecting part was a dark purple, especially when the child was placed in the standing posture; and numerous subcutaneous veins were visible, (see drawing). The disease was perfectly circumscribed; pressure did not produce any appreciable diminution of size; there was no marked pulsation; but by grasping the tumour, and holding it firmly for some time, an indistinct throbbing could be felt.

" The disease was removed by the knife. Two incisions, making an ellipse, were carried though the skin round the base of the tumour, and the entire mass was therefrom dissected out with much facility, and without the loss of a spoonful of blood. The smallness in the amount of the hæmorrhage was quite unexpected, considering the usual result of such operations. The wound healed perfectly after the operation, and the disease did not recur.

" In the examination of the part removed, it was found to have been perfectly circumscribed, and easily separable from the surrounding cellular tissue. Its deeper surface was smooth and like the dense capsule of an old encysted tumour: its projecting portion was covered by the cutis, except at the most prominent part, where nothing but thick cuticle was superimposed. The cutis, spread over it in front, and the dense capsule which enveloped it behind, appeared to have parts of the same original texture split asunder and modified, in accordance with their respective relations. In short, the abnormal texture appeared enclosed between the layers of the cutis vera. No vessel, capable of receiving the finest injecting-pipe could be detected on any side of the tumour, except one small subcutaneous vein, (see preparation and drawing), through which coloured size was impelled, and a successful injection thereby effected. The vessels of the tumour, both those on its surface and those in the interior, were instantly filled, and fresh plumpness given to the mass. In the section which has been made of the tumour, since injection, it is rendered evident that the latter consists of congeries of a minute or capillary vessels, springing from the exterior capsule or cutis vera, and forming an inextricable network in its interior, without, however,

exhibiting anywhere a varicose condition, or a connexion with dilated cells."—pp. 112, 113.

"B. *c.* 155. A corroded preparation, showing the arrangement of the blood-vessels in an aneurism by anastomosis. The tumour had been growing from infancy on the forehead of a female, and at the age of about twenty-five, had arrived at the size of a crown piece—being circular and nearly two inches in diameter. In this state she was received into Steevens's Hospital. On the day after admission, a small slough on the apex of the tumour gave way, when a gush of arterial blood issued from it in a stream, as if from a divided carotid artery. Well directed pressure, at the moment had the effect of checking the hæmorrhage, and as soon afterwards as possible, the whole tumour was excised by Mr. Cusack. There was considerable bleeding during the short period of the performance of the operation, but it was soon arrested by the application of dossils of lint and compression. Mr. Shekleton, to whom the tumour was given, sewed up the mouths of all the vessels around the margins of the incision, except that of one large vein, through which he succeeded effectually in filling, with wax-injection, the vessels of the tumour. Of this a corroded preparation was made, in the usual way, and a beautiful model of all the vessels, large and small, constituting the aneurism, thereby procured. The preparation, which is, perhaps, unique, exhibits a closely packed mass of blood-vessels, principally veins. These vessels, which vary in size from a crow-quill to a hair, are extremely tortuous; and present, in different parts, abrupt dilatations, followed often, by equally abrupt contractions or narrowing. The whole looks like a corroded kindey; except that it is deficient in systematic regularity of progression from large vessels, on one side, to capillaries, on the other; the whole, large and small, being mixed up together without order. The wound healed, though slowly, in consequence of the great loss of substance on the forehead; and the disease did not return in any part of the cicatrix or its margins."—pp. 114, 115.

"B. *c.* 272. Aneurism of the coronary artery of the stomach. It forms an oblong tumour, about three inches in length, which is closely attached to the lesser curvature. Its cavity is almost obliterated by a coagulum. The vessel comes off, in this case, from the aorta as a separate branch."—p. 135.

"B. *c.* 273. Dissecting aneurism. It arises from the abdominal aorta, nearly three inches above the bifurcation, and forms an oblong tumour, which passes down upon the primitive iliacs, and terminates gradually. Above, the sac communicates freely with the aorta, while below, it opens into the iliac trunks, about the middle of their course, by two circular apertures, each equalling in size the calibre of the femoral artery. Behind the sac, runs the proper continuation of the aorta, and that portion of each iliac artery which intervenes between its origin and the point at which the sac opens into it: they are greatly flattened by the pressure to which they have been subjected. The aneurism possesses a dense cellu-

lar coat; its middle tunic is as thick as that of the aorta, and differs from it merely in the irregular arrangement of its fibres; the lining membrame resembles that of arteries, and is raised up into small tumours in many parts, by atheromatous deposits beneath. From a middle-aged woman."—p. 135.

"B. *c.* 274. Dissecting aneurism of the left common iliac artery. The sac communicates with that vessel close to its origin, passes down in front of it, and terminates in the external iliac artery by two openings, separated by a transverse band. The continued trunk of the primitive iliac is flattened from the pressure of the tumour, but in no way obliterated. The walls of the tumour are thick and firm; its cellular coat strong; it is lined by a layer of smooth lymph, beneath which there are some curdy deposits. Its diameter, at the widest part, is about two inches; from this, it tapers towards each extremity. This peculiar form of aneurism appears to commence by a dilatation of all the coats; the two inner, however, soon give way; the blood insinuates itself between the external and middle coats, separating them from one another, to a variable distance, and distending the former into a sac; ultimately the two inner tunics are again ruptured, at a point more distant from the heart, and blood regains its natural channel.—p. 136.

Elements of Chemistry, including the most recent Discoveries and Applications of the Science to Medicine and Pharmacy, and to the Arts. By Robert Kane, M.D., M.R.I.A., Professor of Natural Philosophy to the Royal Dublin Society; Professor of Chemistry to the Apothecaries' Hall of Ireland, &c. &c. Part II. illustrated by forty-nine Woodcuts.

The Second Part of this admirable work, including the description of the simple bodies and their binary compounds, is now before us, and well sustains the high expectations, which we were led to form from a perusal of the First Part. We have been at once surprized and pleased by the views brought forward in the chapters on isomorphism and isomerism. We anxiously look forward to the publication of the third and last Part on "Organic Chemistry."

An Atlas of Plates illustrative of the Principles and Practice of Obstetric Medicine and Surgery, with descriptive Letterpress. By Francis H. Ramsbotham, M.D., &c.: Churchill, London.

We have deferred noticing this publication until its completion, that we might be better able to speak of its merits; and now that it is finished, we have no hesitation in saying that the promises of author and publisher have been amply redeemed, and that the work is admirably suited to the end proposed. It is *the* book on midwifery for students, clear, but not too minute in its details, and sound in its practical instructions; it is so completely illustrated by plates (admirably chosen and executed) that the student must be stupid indeed who does not understand the details of this branch of the science so far at least as description can make them intelligible. We add this proviso, because of all the branches of medical science, midwifery is the one which most especially requires practice to comprehend, and because there is some little danger, with so nice a book before him, of the student's dispensing with the irksome duties of attending cases.

The first part of the work is devoted to the consideration of the bones of the pelvis, separately and conjoined; of the fœtal head; of deformed pelvis; of the external and internal female generative organs, and of the gravid uterus, and what is given is good. That a greater scope of information might have been taken is true, but we doubt whether, as a student's book, its value would not have been diminished thereby.

After this introduction the author enters upon the consideration of natural labour; and as this is precisely the chapter which we think most defective in ordinary books, we shall inquire a little into our author's mode of handling it. Having treated of the mechanical conditions of labour, the pelvis, and the fœtal head, Dr. R. in this chapter notices specially the vital power or agent:

"The principal agent in labour is the uterus itself, but it is much assisted in its action by the contraction of the abdominal muscles, and probably also of the diaphragm. The action of the uterus is perfectly involuntary, and consists in a contraction of the fibres imbedded in its structure, which, indeed, form its peculiar parenchyma. These fibres obey in labour the laws of muscular action; their extremities are brought nearer together, and in the same proportion as their length is diminished they become increased in thickness. Thus, inasmuch as the fibres run throughout the uterus, traversing it in all

directions, every part of the uterine structure is lessened in extent, the capacity is decreased, and the internal membrane is brought into forcible contact with its contents. By this contact pressure is excited, propulsion is produced, and, eventually, expulsion is effected. Even after the child is born, the same kind of contraction goes on in the uterine parietes, for the purpose of expelling the placenta, and of gradually closing the open vessels. It is by this contraction that hæmorrhage is prevented, and the safety of the patient is, in that respect ensured."—p. 107.

The *symptoms* of labour are of two kinds; those which merely indicate the approach of labour, and those which mark its commencement. Among the first may be included the subsidence of the uterine tumour, "partly produced by painless contraction going on in the uterine fibres themselves, and partly by the subsidence of the organ within the pelvic cavity;" the "shews," and "a peculiar degree of anxiety."

Among the second class of symptoms may be mentioned "irritability of the bladder and rectum, nausea aud vomiting, rigors or tremors, unattended with any feeling of cold, a sanguineous discharge flowing out of the vagina, and painful sensations."—p. 110.

Upon each of these symptoms Dr. R. gives full details, and he dwells very carefully upon the character of the labour pains, and points out the diagnostic marks between spurious and true labour pains.

"False pains then may be distinguished by their situation; instead of commencing at the lower part of the loins, and being extended to the abdomen and thighs, they are probably felt higher up in the back, or toward one or other side; by their shifting their position, it is seldom that they are constant to one spot, but mostly erratic; but they may especially be known by the length of their duration and their irregular returns. Thus, true pains, at the beginning of labour, are short and weak, and the intervals between them long, and they increase in frequency and intensity as the process advances: false pains, on the contrary, observe no kind of regularity, either in regard to the periods of their return, or to their progressively becoming more frequent or severe."—p. 119.

In addition, the *feel* of the uterus through the abdominal parietes, and the state of the os uteri, (which is not dilated by spurious pains), will afford assistance in forming our diagnosis.

We next come to the author's classification of labour into

"1. Natural.
2. Difficult.
3. Preternatural.
4. Complex."

To this arrangement we have no objection so long as it is remembered that it is an artificial one, and involves a more natural one.

Natural labour is defined as

> "A case, in which the head of the child presents; in which not more than twenty-four hours are occupied from the commencement of the uterine action to the termination of the process, in which nothing extraordinary happens, nothing of a dangerous or alarming tendency supervenes throughout the whole conduct of the case."—p. 123.

This is the usual definition, but we hold it radically defective in one point, namely, in not expressing the necessity of a due proportion between the *first and second stages*. Suppose the first stage of a labour completed in two hours, and the second to continue for twenty-two, so as to come at that period within the limits of the definition, how far would the second part of that definition apply? There would be symptoms of a very "dangerous and alarming" character in all probability. In fact, we want a series of observations as to the relative duration of these two stages in *natural* labour. As far as our own investigations have extended, the proportion of the first to the second stage is rather more than as two to one.

The description of the phenomena of each stage is very good, and the practical directions very judicious, but we must refer the reader for them to the book itself.

Immediately after the chapter on difficult labour, the author has very properly introduced the subject of obstetric operations, and has shown great familiarity with their proper use. Indeed he could have no better guide than his father's excellent work.

Next we come to preternatural labour—breech and transverse presentations; then to complex labour—hæmorrhage, convulsions, rupture and lacerations, collapse, prolapsed funis, descent of the hand with the head, monsters, and plural infants.

A great mass of information is thus collected and placed before the student, carfully, clearly, and simply; from it practical inferences are deduced, and instructions laid down with caution and judgment, and to render the entire perfectly intelligible there are interspersed eighty-four plates, containing from one to three figures each, besides woodcuts.

Need we say one word more to induce our readers to purchase the work? We think not, yet we will just say; that our opinion of its suitability and value is borne out by the fact, that we have just observed on the counter of our bookseller, a *second* edition of the Numbers first published.

A practical Treatise on the Functions and Diseases of the unimpregnated Womb, &c. By Chas. Waller, M.D.

A valuable manual from an experienced physician is at all times a welcome addition to our professional stores, and the only fault we have to find with the publication before us is its brevity. We trust that this may be corrected in a second edition. Without more preface, therefore, we shall introduce Dr. Waller's work to our readers. It embraces most of the diseases to which females are obnoxious, and the author gives his experience modestly and cautiously, and his descriptions, though short, are clear. Take the following account of the cauliflower excrescence:

"This tumour grows from the exterior of the os uteri, and has never yet been discovered within the cavity of the womb. The enlargement in some is very rapid, in others slow; the difference depending partly upon the constitution of the patient, but principally upon the condition of the vagina, whether it be relaxed or firm; and hence the cause is explained, why the disease extends so much more rapidly in married women, especially if they have borne many children; the vagina having been much and often relaxed, readily yields to the pressure of the tumour, and affords no resistance to its increase. This morbid growth is covered over by a thin membrane, which secretes a limpid, watery fluid, the quantity of which necessarily depends upon the size of the tumour, as it is poured out from the whole of its surface; whenever, therefore, the discharge is copious, it may be inferred, even before an examination is made, that extensive disease exists. At its commencement the watery secretion is so trifling that there is little more than the ordinary moisture of the parts of generation; as the tumour gets larger, there will be an increased discharge, until at length the patient suffers inconvenience, and is obliged to wear a napkin; but as no pain is experienced, she has no idea that she is labouring under disease: at length the constitutional powers begin to decline, the countenance becomes sallow, and great weakness supervenes, or perhaps she is alarmed by the sudden irruption of a large quantity of blood. This hæmorrhage may occur spontaneously, or probably be brought on by exercise, or by some sudden

concussion of the body; the bleeding is apt to be renewed by very slight causes, and the powers of the system are speedily reduced."—p. 139.

Ultimately the patient falls a victim to the direct or indirect effects of the loss of blood.

As to the prognosis, it is, as Dr. Waller justly observes, "always unfavourable as regards life," provided we do not see the disease sufficiently early to allow of active interference. We have certainly seen one or two cases in which removal, by ligature followed by the repeated application of nitric acid, has apparently cured the disease. It is now a year since we thus operated, and we believe that the disease has not returned. Professor Simpson, of Edinburgh, has also lately removed the tumour together with the cervix uteri with perfect success.

The treatment recommended by Dr. Waller is judicious in these cases, in which more active means may not be employed.

The Library of Medicine, arranged and edited by Alexander Tweedie, M.D., F.R.S., &c. &c. London, Whittaker and Co.

It must be admitted, that the class of works of which the Library of Medicine is an example, has hitherto had but little influence in advancing the science of medicine. The production and multiplication of such books, is but a weak indication of the progress of the healing art, as a science of observation, but rather shows a disposition in certain individuals to trade upon the labours of others, and this remark applies too often to the contributors, as well as the Editors. But when the Editor is himself a man of science and original thought, and when he procures the assistance of even a few first class contributors, such works become of unquestionable utility, principally in bringing the talents of some eminent men to bear on subjects which they might otherwise have neglected. No one can deny the value of the Cyclopædia of Practical Medicine, or of Professor Todd's Cyclopædia of Anatomy and Physiology. These are works containing monographs of the first importance, showing that the success with which medicine and its accessory sciences have been cultivated in these countries during the last quarter of a century, is in no respect inferior to

that which has attended the labours of the pathologists and physiologists of Germany or France.

In the work now under consideration, we find in the list of contributors many most distinguished names, among which those of Alison, Prichard, Christison, Hope, Symonds, Locock, and Williams, are pre-eminent. We shall glance at a few of the dissertations on Practical Medicine, of which the first is an Introductory Essay on General Pathology, by Dr. Symonds, and the next an excellent article on Inflammation by Professor Alison, whose opinions on this and all other departments of medical science, have the greatest weight and authority with all right thinking men.

Dr. Alison believes, that the phenomenon of inflammation is to be explained by assuming an increase of a power of vital attraction, not only between the blood globules themselves, but between them and the tissues with which they come in contact; and in support of this opinion he refers to the movements of the sap in vegetables, ministering to the same functions of nutrition and secretion, as in animals, although without contractile solids, to produce or assist their motion. Here the observations of Dutrochet on the imbibing power go to support the doctrine, as showing that in certain vegetables it can be proved "to be of the nature of attraction and repulsion, and not of contraction and impulse. Ascending in the scale we come to the sponges, and to that class of animals possessing a diffused circulation, that is, a circulation not confined to vessels, and the probabilities that here also we have similar forces, become almost a certainty.

But further we find that at a certain period of embryonic existence, forms are assumed, long before the formation of heart or arteries, and therefore moving powers independent of them must have existed. And in the entrance of the fluids into the filaments of the spongy chorion in the embryo of the vertebrata, we see no moving power of the nature of contraction and communicated impulse, by which the phenomenon can be explained.

But other circumstances can be alluded to, of which the principal are, the action of the absorbents and capillaries, and the phenomena of coagulation of blood in health and disease.

Dr. Alison, after a luminous examination of these facts, comes to the conclusion above stated, that inflammation consists essentially in a local increase of a vital property, existing among particles of the blood and the surrounding textures.

"This increased alteration seems to take place both among the particles of the fibrin which are in unison with the serum in the lining vessels, and in those particles of nearly similar matter, which constitute the bodies of the globules, the increased aggregation of both being characteristic of inflamed blood."

"The increased flow of blood to the inflamed part, and probably the gradual relaxation of the vessels leading to it are the consequences of this alteration, just as the accelerating the flow of blood through the lungs, on the admission of air there, is the consequence of the changes, partly chemical but partly vital, thereby brought on the blood, or as the increased flow of blood to the uterus during gestation, to the stomach during digestion, or to any secreting organ to which a stimulus is applied is the consequence, not the cause, of the vital changes to which the blood in these organs is subjected on such occasions. When the vital properties of the blood, and its relations to the living solids, shall have been more carefully scrutinized, this proposition will require more precision, but even at present it is obvious that we assert nothing which is not susceptible of demonstration, in asserting that such a vital power of attraction or aggregation among certain particles of the blood exists in the natural state, that it is the cause of the coagulation of the blood, i. e. that it is the cause of any portion of the constituents taking the form of fibrin; that it is concerned in regulating the circulation in the capillaries; and that it is materially augmented in an inflamed part, as appears both from the larger quantity of blood which takes the form of fibrin, and from the greater aggregation of the fibrin itself, both in the blood of the vessels and in the matter extravasated there, and thus it appears sufficiently ascertained that the influx of blood to the inflamed parts, its stagnation there, and the most important of the changes which it undergoes, are included in this general proposition, that the fibrin contained in the blood in that part of the body is affected during the state of inflammation with the very same change of property, to which when we see it in the fibrin that constitutes the bulk of muscular fibrin, we give the name of rigidity or tonic spasm."—p. 65.

Following Dr. Alison's essay on Inflammation we find the article Fever, by Professor Christison; who, in adopting the doctrine of essentialism, has followed in the track of the best British authorities. Dr. Christison's paper is divisible into the theoretical and practical parts, and we have great pleasure in expressing our most favourable opinion at least of the first part. In the second, or that devoted to practice, we do not think Dr. Christison so successful.

Our readers will be glad to know the opinions of Dr. Christison on the doctrines of Stevens, which however, are now beginning to be forgotten.

"So much attention," says Dr. Christison, "has of late been drawn to the investigations of Dr. Stevens, and the facts on

which his theory is founded, as well as the practical conclusions to which it leads, are of such a nature that it is entitled here to more particular notice. According to his observation, confirmed by that of other practitioners in hot climates, the blood in the marsh-remittent of the West Indies, and yellow fever, which he considers a variety of infectious typhus, undergoes important changes in constitution. Even for days or weeks before the disease breaks out, the blood, in persons who have been for some time exposed to the poisonous effluvia, is usually dark, its serum brownish or yellow, with colouring globules precipitated through it, and its venous tint incapable of being thoroughly turned to arterial red by contact with air or various salts. These morbid characters Dr. Stevens seems to suppose, though he nowhere states so categorically, are owing to a diminution of the saline ingredients of the blood—those ingredients which he was the first to prove, by a set of interesting experiments, to be essential for a healthy process of arterialization in the lungs. As the disease forms and advances, this morbid condition of the circulating fluid increases. The salts become less and less abundant; and, in consequence, the blood becomes progressively darker, the serum more coloured, the clot looser and looser, like ill-made currant-jelly in consistence, and the modena tint of the venous blood less and less capable of becoming florid under exposure to air or saline solutions, till at length what is found in the dead body undergoes no change with either agent, or even with both together. These progressive changes he maintains to correspond invariably with the progress of malignant spmptoms. And, on the contrary, it is alleged, that if the morbid state of the blood is encountered in time by the administration of neutral non-laxative salts, allied to those usually found in the blood in its healthy condition, this fluid quickly recovers its healthy characters, amendment speedily ensues, and the mortality from one of the severest scourges of man in hot climates is reduced to a mere insignificant fraction. Dr. Stevens's theory therefore is, that the poisonous miasma of marsh-remittent, and the infectious effluvia of yellow fever, alter the condition of the blood, especially by removing its saline ingredients; that this diseased state is the cause of such fevers; and, more particularly, that its gradual increase is the occasion of all the malignant symptoms, and of death. But he does not confine his inferences to the fevers which he has practically investigated. He holds in general terms, that "all essential or idiopathic fevers are primarily produced by a diseased state of the whole circulating current.—(*Observations on the Healthy and Diseased Properties of the Blood*, p. 148. 1832.)

"It is impossible to enter here into the facts and arguments by which these views have been supported. Let it suffice, that the humoral pathology has thus been for the first time placed on something like a substantial basis. Dr. Stevens's researches go to prove, that the fevers of the West Indies originate in a diseased state of the blood. Propositions so important, however, cannot be adopted without strong confirmation. This they have not yet received from his trasatlantic

brethren, though his book has been before the world upwards of six years; and, meanwhile, they cannot but be viewed with distrust in Europe, when it is found, that contrary to his general inference, they will not apply to fevers universally, but are at variance with what is observed in the typhus of Great Britain. For the blood in British typhus presents no marked disease at the beginning; its saline matter, though it diminishes as the disease advances, does not decrease out of proportion to the other ingredients, more especially the colouring principle; and, in the worst cases, to the very last, nay even after death, the dark venous tint of the blood readily undergoes the usual change to arterial red under agitation with air, if that experiment be properly managed. But further, it certainly appears not a little extraordinary, that this theory should have been propounded in regard to the fevers of the West Indies, without actual experimental proof of the fundamental fact, a diminution, and disproportionately great diminution, of the saline materials of the blood. Nothing could have been easier to determine by analytic experiments; yet there is not a single analysis of febrile blood in the author's whole book, nor is it any where stated that such was ever made; and the loss of the salts of the blood is allowed to rest merely on inferential evidence or simple asseveration.

"On the whole it may be strongly suspected, that, like many of his predecessors who are blamed by him for the same error, Dr. Stevens has mistaken effects for causes. That important changes occur in the blood in the course of fever was partly known before by vague observation of its sensible qualities, and is now fully substantiated by his researches, and the experimental inquiries of Dr. Reid Clanny. But the alterations which have been hitherto ascertained, have by no means been proved to precede fever. They are distinct, at least, only after the disease has prevailed for some length of time; they certainly become greater and greater as it advances; and consequently the presumption is, that they are its effect, and not its cause. It seems highly probable, that a careful investigation of the state of the blood and secretions, among the other secondary phenomena, will lead to important reformations of opinion, as to many pathological details connected with fever. But the attempt to base a revival of the humoral pathology in its full force upon the late chemical discoveries is premature, to say the least of it."—pp. 117, 118.

(*To be continued.*)

SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

Session 1840–41.

First Meeting, November 28th, 1840.

Mr. Carmichael in the Chair.

1. *Fungoid Tumours of the Cerebrum and Cerebellum.*—Dr. Hutton presented a specimen of fungoid tumours of the brain taken from a female aged 33, of intemperate habits, who was admitted into the Richmond Surgical Hospital on the 10th November, 1840. About seven weeks before admission she had been seized with a convulsive fit, followed by loss of muscular power, stupidity, and involuntary discharge of fæces, severe stupor then set in. On admission, she appeared quite helpless, the left upper and lower extremities were completely paralysed, the right limbs incompletely so, being moveable by the will to a small extent only, and that with a trembling and unsteady motion. Her speech was thick and inarticulate. The sphincters were quite paralysed, and she had diarrhœa, incontinence of urine, and excoriation of the nates. Her face was full, her expression dull and heavy, and her pupils dilated. Her intellect was much confused, and her memory of words more deficient than her perception of ideas. Being asked did she feel pain in her head, she said yes. She had loose cough with some dyspnœa, pulse 120, small and compressible. She was cupped between the shoulders, had tartar emetic ointment applied to the scalp, and mercurial frictions. On the 13th she seemed better, her speech was more distinct, she answered two or three questions pertinently, held out her right hand when desired, and made an effort to raise the left. She drew the right foot upwards in the bed about an inch with difficulty. The diarrhœa and relaxation of the sphincters continued as before, and she died in two days.

On examination a considerable number of fungoid tumours were discovered in the medullary structure of both hemispheres of the brain and the lobes of the cerebellum, varying in size from a large pea to a walnut. On making a section of these tumours they appeared of a flesh colour mixed with gray. The largest which occupied the anterior lobes of the brain were softened in their centre, and when

immersed in spirits presented a flocculent or shreddy appearance, their cut margin being firm, rounded and prominent. The smaller tumours were not softened, and their section presented a granular surface. The line of demarcation between these tumours and the healthy structure of the brain was abrupt, but they were not encysted. One of them occupied the medullary structure of the corpus striatum. The spinal marrow was not examined. A considerable mass of cerebriform structure occupied the bifurcation of the trachea, in which the disease appeared to have commenced, as Dr. Hutton was led to infer from the extent and softened condition of the fungoid deposit. It extended into the substance of the right lung, a large portion of which was simply hepatized. Two cerebriform tumours existed in the cavity of the right bronchus, one of which closed the orifice of a large tube. The bronchial membrane presented the usual signs of chronic inflammation. (*Museum, Richmond Hospital*).

2. *Plastic Inflammation of the Colon in the Infant.*—Dr. H. Kennedy exhibited the principal portion of the large intestine of a child aged eight months. The whole mucous surface, particularly that of the rectum, was very much inflamed, and coated with a layer of lymph, partly continuous and partly in distinct patches. There were traces of a similar condition of the membrane in that portion of the intestine in which the glands of Peyer are situated, but Dr. Kennedy could not detect ulceration any where. The subperitoneal cellular membrane was infiltrated with a gelatinous fluid, and the coats of the intestine were thickened. The mesenteric glands were large and red, but did not contain any morbid deposit. The child had been about two months ill with diarrhœa, but from first to last, nothing had been observed in the motions which would lead one to suspect the actual condition of the intestinal tube. The child's appetite was ravenous, and it had no vomiting.

3. *General Development of Tubercle, with Disease of the Thymus Gland.*—Dr. Lees showed two preparations illustrating the fact of general development of tubercle at an early period of life. The first was taken from an infant aged four months, apparently healthy when first admitted, but on being placed in a large ward, in which a great number of women and children were located, it began to pine away, got a pale and unhealthy aspect, short cough, watery diarrhœa, and sank at the expiration of about three months. On examination, the brain was found to be firm, but otherwise natural. The lungs were of a florid red colour and almost completely filled with yellow tubercles. The thymus gland was infiltrated with tubercular matter, so as to form a large indurated mass. The spleen was also studded with tubercles. The liver was not hypertrophied, but it presented a pale aspect, as if an excess of the yellow substance prevailed; it was of a granular structure, had a doughy feel, and was rather greasy, resembling in many points the degenerated liver of the goose. There was ulceration of the lining membrane of the lower third of the ileum. The next preparation exhibited by Dr.

Lees was taken from the body of a child seven months old who had always presented an unhealthy appearance, and haggard features, with enlargement of the abdomen, cough and diarrhœa. On dissection the brain was found to be soft, there was a considerable quantity of fluid in the ventricles, with subarachnoid effusion, but there was no granulations or tubercles. The lungs were very pale, almost white, studded with small, hard transparent tubercles, and contained spots of lobular pneumonia. The thymus gland was infiltrated with tubercular matter, very firm, and the bronchial glands were in the same condition. The spleen, mesenteric glands, and lower third of the ileum were also filled with tubercles. In both of these cases there was no remission, the pulse being constantly quick. Although the thymus gland had encroached considerably on the trachea there were no symptoms which would lead to a suspicion of the existence of disease in that organ.

4. *Arachnitis of the Cerebellum and Pons Varolii.*—Dr. Carlile exhibited the brain of a man of about sixty years of age, who had been admitted into the poorhouse about five months ago apparently in good health. Two months afterwards, he began to complain of pain in his head, constant, but uncertain as to its seat, sometimes felt at the sides but most commonly in front. He was also observed to lose flesh, and became thin and emaciated. His sleep became uneasy, his appetite diminished, and he complained of a constant feeling of chilliness. These symptoms increased progressively, his emaciation and loss of appetite went on, and his sleep, which was much disturbed, was attended with incoherent talking. After some time he sank quite exhausted, his symptoms remaining unchanged, the most remarkable being emaciation and a constant feeling of cold. His intellect remained unimpaired until a short time before death, he had no paralysis, or convulsions, nor did he manifest any symptom referrible to the cerebellum or base of the brain. On opening the skull, an effusion of pus and lymph was found between the arachnoid membrane and pia mater on the lower surface of the cerebellum, extending in the mesial line, and for three quarters of an inch on either side, from the back part of the cerebellum, to the medulla oblongata. There was also an effusion of the same description in front of the pons varolii, nearly an inch in length, and an inch and a half in breadth. About three ounces of purulent serum were found in the lateral ventricles; in other respects the brain appeared to be free from disease, and the rest of the viscera were reported to have been healthy. This case is interesting inasmuch as that the local symptoms did not lead to a suspicion of the seat of the cerebral affection, the pain being generally referred to the forehead, and there being no symptom present characteristic of a lesion of the cerebellum or base of the brain. It is interesting also as showing that an affection of a portion of the central mass of the nervous system, not attended by prominent or characteristic symptoms, may affect certain of the organic functions, as in this instance, the functions of nutrition, and of the production of animal heat.

5. *Fungus of the Antrum.*—Dr. Kirkpatrick exhibited a specimen of a malignant disease of the face, which had occurred in a woman aged forty three. She had been a patient in most of the Dublin Hospitals, and had been operated on about two years ago in the Meath Hospital, the operation consisting in the removal of a portion of the upper jaw. The disease however returned, and continued to increase until it caused her death. On examination it presented a good example of the encephaloid tumour. It originated in the situation of the antrum, and extended into the orbit, displacing the eye, and completely filling up the nasal fossa with a substance resembling brain. It also formed a large globular tumour in the mouth, of a firm and elastic feel, which greatly interfered with speech and deglutition. The functions of hearing and vision were impaired at the diseased side, but not to a great degree. The bones within the cranium were not affected, but those in contact with the diseased mass were either completely absorbed or greatly thinned. The patient did not appear to suffer violent pain. A few days before death, the tumour within the mouth increased, and the patient sunk exhausted by the discharge which constantly drained from the mouth. There was some slight arachnoid effusion. The thoracic and abdominal viscera were sound.

6. *Caries of the temporal Bone. Phlebitis of the lateral Sinus and internal jugular Vein.*—Mr. Smith laid before the Society an example of caries of the right temporal bone, removed from the body of a boy, aged sixteen, who entered the Hardwicke Hospital, May 27, 1840; he had been from his earliest youth exposed to the greatest hardship and accustomed to laborious exertion. He had been ill for seven days bafore his entrance into the hospital; he complained of shiverings, and a cold creeping sensation, succeeded by intense pain in the right ear and right side of the face; he had nausea and vomiting, with total loss of appetite, he was constantly drowsy, but was prevented from sleeping by a loud noise in the ear. After remaining under treatment for a short time, he left the hospital and resumed his work, but was soon obliged to discontinue it from the great debility and occasional syncope, with which he was overpowered. When he was admitted, he could not walk steadily, he had no spasmodic or irregular action of the muscles, but he staggered from vertigo, he was thin and pale, had a vacant stare, with large and equally dilated pupils; his answers to questions were slowly given, but rational, he complained of severe shooting pain through the back of his head into the right ear, from which flowed a greenish fœtid matter; his tongue was white and moist; his pulse 132, small and sharp; he had a hot skin, nausea and vomiting. He grew rapidly worse after admission; slept but little, frequently started from his sleep, moaning and complaining of acute pain in the right ear; whenever he attempted to rise, he supported his head with his hand, and was sensible of a noise in the head, like the splashing of water; there was a sense of fluctuation and great tenderness over the mastoid process, a teaspoonfull of very fœtid

matter was given exit to, by incision, and the bone was found denuded of its periosteum, he had great epigastric tenderness, and ardent thirst. Upon June 3rd, he had a jaundiced hue, and an attack of diarrhœa, with tenesmus, he had likewise cough, which was very distressing, and accompanied by severe pain along the right side of the neck. Upon the 6th, symptoms of arachnitis set in; violent darting pain in the head; alternations of chills and heat; a rapid pulse, delirium; irregular pupils; vomiting; occasional singultus; he was restless; burning heat of the scalp; and cold extremities; he soon became comatose, ceased to answer questions rationally, and died June 11th.

Autopsia. Thorax.—The left cavity of the pleura contained about four ounces of thin fœtid matter, and a yellow tenacious lymph adhered both to the costal and pulmonary layers of the membrane. Similar appearances were noticed in the right cavity of the pleura, but not to the same extent, the lungs were solidified in the postero-inferior portions, and small circumscribed deposits of purulent matter were scattered through them; these deposits were contained in cavities, lined by a smooth membrane, and in two instances, a small branch of a vein was distinctly traced opening into them; these veins were inflamed; lymph was deposited upon their exterior, and purulent matter was contained within them; there also existed in the left lung, three large spots resembling pulmonary apoplexy; these were as large as a walnut, firm, of a livid blue colour, and blood exuded from them upon pressure; the lining membrane of the smaller bronchial tubes was intensely vascular, the pericardium contained about three ounces of serum, and flocculi of lymph were seen upon the surface of the heart, chiefly upon the right auricle.

Head.—The brain was firm, the left hemisphere pale, the right highly vascular in its interior, and the membrane covering it was minutely injected with blood, especially along its inferior surface. Three small purulent deposits, surrounded by a vascular circle, and apparently encysted, were found at the inferior surface of the right lobe of the cerebellum, where it corresponded to the lateral sinus; the dura mater was seperated by pus and lymph of a green colour from the anterior surface of the petrous portion of the right temporal bone; there was no perforation of the membrane, but over that portion of the bone, which constitutes the superior wall of the tynpanum, it was elevated into a small tumour by a collection of fœtid matter, and presented a sloughy aspect. The portion of bone corresponding to this abscess, of a circular form and about one-fourth of an inch in diameter, was dead, and of a dull white colour. The process of separation from the living bone was far advanced, and at one point of its margin, the separation was complete, the aperture thus formed communicated with the cavity of the tympanum; the remainder of the petrous portion was remarkable for its vascularity; the membrana tympani had disappeared completely; the membranous walls of the right lateral sinus, throughout the whole of the mastoid portion of its course, were much thickened, and the

lining membrane of the vessel presented a sloughy appearance, being covered with lymph of a greenish hue and smeared with unhealthy purulent matter; this condition of the lining membrane extended along the jugular vein and superior vena cava to within a short distance of the entrance of the latter into the auricle; the lining membrane of the remainder of the vena cava was of a dull tawny colour. (*Museum, Richmond Hospital.*)

7. *Aneurism of the Aorta Opening into the Left Ventricle.*—Sir H. Marsh presented a specimen of a rare form of aneurism of the aorta. The heart was very much increased in size, the ventricles dilated with hypertrophy of their parietes, most evident in the left ventricle. The left ventricle was completely filled with a mass of yellow fibrin, extremely tenacious, and occupying every fissure and crevice between the carneæ columnæ. The auriculo-ventricular valves on both sides of the heart were free from disease. On slitting up the aorta a pouch or sac was seen depending from the root or origin of the vessel into the left ventricle, and resting against the larger division of the mitral valve. Its size was about that of a small walnut. It was of a dark purple colour when recent, owing to the presence of a black coagulum which filled it, and which was distinctly visible through its thin and transparent coats. This pouch was formed by the distention or stretching of one of the sigmoid valves of the aorta, and presented three openings on its sides, two of which were small and of oval form, but one was of considerable size and appeared like a rent in the membrane. The pericardium was healthy.

The patient from whom the above specimen was obtained, was thirty years of age, and was admitted into hospital with symptoms of cardiac disease. His countenance was pallid and expressive of much distress. During the few hours that elapsed between his admission and his death, palpitation, with orthopnœa, and a loud bellows sound, were always present. About 10 o'clock at night he felt suddenly faint, and called out that he way dying; from this period he became gradually more weak and breathless, and died at the end of ten hours.

It is probable that the smaller openings in the sac existed previously to his admission into hospital, and that the larger rent took place ten hours before death, and that in consequence of this, at each contraction of the aorta, the blood regurgitated into the left ventricle, and the man actually died of hæmorrhage into his own heart.

Sir H. Marsh also presented a specimen of disease of the mitral valves with rupture of the chordæ tendinæ. The heart's size was much beyond the natural standard, owing chiefly to hypertrophy of the left ventricle. The aortic valves were thickened and incapable of acting freely. The mitral valves were extensively diseased, presenting along their free margins several masses of ossific and calcareous deposit. Some of the tendinous cords of the valve were affected in the same manner, and two of them rendered fragile by this morbid change, were ruptured close to their attachment to the mitral valve. The individual from whom the specimen was taken had been in hospital about a fortnight, and during that period had exhibited the usual signs of

valvular disease in the left side of the heart; under the influence of quietude and treatment calculated to allay the heart's action, the distressing symptoms, under which he laboured at his admission, were very much subdued. On the day of his death he felt so much better that he had walked out some distance to see his friends. On returning to the hospital in the evening he appeared as well as usual, but whilst preparing to go to bed, he fell back and almost immediately expired.

Second Meeting, Dec. 5th, 1840.

Abraham Colles, Esq., in the Chair.

1. *Multilocular Tumour compressing the Trachea.*—Mr. Mayne said he had been requested by Doctor Kirkpatrick to exhibit a small tumour originally situated in front of the larnyx and trachea, and which had given rise to considerable difficulty of diagnosis during life. The case was that of a woman aged sixty. She stated that the tumour had appeared in front of the larynx about five years ago, that at first it was very small, free from pain or tenderness, and caused no inconvenience whatever. It continued however to grow steadily, and about four years since she began to feel a tightness about her throat accompanied by some dyspnœa. The tumour increased in size until it assumed the shape and dimensions of an egg, its enlargement being attended with increased dyspnœa, which latterly attacked her in paroxysms, causing great suffering. She then got bronchitis, and finally, symptoms of acute pneumonia, of which she died. On examination, the tumour was found to be situated under the sterno-hyoid and sterno-thyroid muscles in front of the thyroid and cricoid cartilages and resting on the upper rings of the trachea. It was quite circumscribed and attached to the neighbouring structures merely by cellular tissue so as to admit of being easily separated. A large vein ran down in front of it. On making a section of the tumour it was found to consist of a number of small cysts filled with a thin fluid. The left lung appeared to be more heavy and solid than natural, and on making an incision into it, Dr. Kirkpatrick found extensive traces of pneumonia in the second stage, the tissue of the lung breaking down readily under the finger. There was also emphysema of both lungs. Mr. Mayne said that he could not exactly say how far the presence of this tumour could be looked upon as the first step in the morbid conditions of the respiratory system. Could the pressure, caused by the tumour, have produced such a degree of pulmonary irritation as would lead to the formation of bronchial inflammation, and subsequently of pneumonia. It was easy to conceive that from its situation and close connexion with the larnyx, it must have caused some irritation there. During life the tumour felt firm and fleshy, was free from pain, and moved up and down with the respiratory motions. The woman said she had applied to several surgeons but they had refused to operate on it. Dissection however showed that it could have been easily removed, for it was attached to the thyroid gland and larnyx merely by cellular

tissue. The only difficulty likely to produce any embarassment to an operator arose from the presence of a large vein which ran down the front of the tumour.

2. *Cancerous Disease of the Pylorus.*—Mr. Parkinson said, that the person from whom the parts before him had been taken, was a man aged sixty, of very intemperate habits until about three years back, when he became more moderate. From this period he became subject to protracted attacks of diarrhœa during the winter; these however would gradually disappear, and he would recover his flesh and strength as before. About three months back he began to complain of the affection of which he died; the symptoms were pain in the stomach, and oppression of his meals, with sour regurgitations and water-brash. About a month before his death he vomited every thing he swallowed, the matter ejected bearing at first a gelatinous consistence, somewhat like frog's spawn, and afterwards assuming the appearance of coffee-grounds. Notwithstanding the vast quantity of fluid thrown up, the urine was as copious as usual, and continued so up to the period of his death. When first seen by Mr. Parkinson the chief symptoms were obstinate vomiting, great emaciation, and very remarkable confinement of bowels, the patient stating that he had not passed any thing from his bowels for three weeks. On examning the abdomen, it had a doughy feel, without any tympanitic sound, and conveyed to the finger the sensation as if the intestines were so connected as to form one solid mass. The patient stated that for the last three years he had been employed in a lead manufactory. On opening the abdomen the intestines did not protrude, and were observed to be in many places abnormally adherent. The peritoneum was highly vascular, and presented patches of lymph in various situations. The omentum was shrivelled up into an indurated mass and had lost most of its original characters, and the general capacity of the intestines was smaller than natural, the colon particularly so. The volume of the stomach was reduced, and it had contracted extensive adhesions to the surrounding viscera. Towards the cardiac orifice and greater extremity, the spleen was so firmly attached, that it required a considerable degree of force to separate them. The chief seat of morbid degeneration, however, was the pylorus, which felt remarkably hard and firm, the diseased structure terminating in an abrupt line, leaving the duodenum free from alteration, and presenting the usual healthy appearance. The liver was also extensively diseased, and presented a considerable number of large cancerous tubercles. On epening the stomach the greater extremity, although highly vascular, was free from disease. The pylorus presented a very remarkable example of true scirrhus, the whole of that portion of the stomach being converted into a thickened indurated mass, with a large sloughing ulcer on its surface, and the orifice of the pylorus contracted in a very remarkable manner. Mr. Parkinson observed, that there were two points in this case worthy of attention. In the first place, it was curious how life had been prolonged for so many months, considering how little food must have passed through the pylorus. From the

appearance of the parts and the advanced stage of the disease, it was natural to infer that the disease had existed for a considerable time, and yet the man had been complaining only for three months. The absence of pain was also another singular feature in the case; the man said he felt no pain, and that if he could get rid of the vomiting, he would be quite comfortable.

3. *Enormous Umbilical Hernia.*—Mr. Adams said the case he was about to bring before the Society was one of hernia of the linea alba, or as it has been termed umbilical hernia. About nine years ago it had been strangulated, so as to require an operation, which proved successful, the stricture being divided and the intestine reduced. The woman recovered rapidly, and was able to follow her occupation as a nursetender. The hernia, however, was merely relieved, but not cured; it returned again, increased gradually in size, and at the time of her death had attained a considerable size, as was shown by the cast exhibited by Mr. Adams. At this period its vertical measurement was nineteen inches; its circumference at the narrowest part twenty-eight inches, and at the widest part thirty-four inches. This was nearly its condition, when Mr. Adams was called to see her in August last. Her symptoms at that time were those of strangulated hernia; the tumour was tense and painful on pressure; she had constant vomiting, thirst, fever, and obstinate constipation. She stated, that she had been frequently attended by Mr. Atkinson, of Gardiner-street, for the same symptoms; in a word, she had had repeated attacks of inflammation of the hernial sac and its contents. These were usually brought on by excess of labour, night-watching, irregularity of diet, or intemperance. She got over these attacks, sometimes by her own efforts, sometimes by medical advice and assistance. On some occasions, when sent for to visit her, Mr. Adams found that she had got better, had gone out, and was engaged in her usual occupation. On the last occasion he found her very ill, and advised her to go into the Richmond Hospital. She complied with his advice, and a consultation was held; but her case was so unfavourable that nothing was done, and she died about fourteen hours after admission. The appearance of the tumour at the time of her death was well represented by the cast; some parts of it felt solid, others fluid or elastic, and altogether it conveyed very much the idea of a malignant tumour. Mr. Adams also exhibited a drawing to shew the state of the skin covering the tumour, as it appeared immediately after death. It was quite livid and black, as if in the first stage of mortification. Having detailed so much of the history of the case, he said he would beg leave to shew the sac and its contents. The sac itself, contrary to the descriptions usually given of umbilical hernia, was remarkably thick. In most cases it is stated, that the sac of an umbilical hernia is very thin, and Billard makes mention of some instances in which there was no peritoneal covering. In Mr. Adams' case the sac was not only entire, but also of considerable density. Externally the hernia presented a thick, firm covering; internally it presented the

appearance of a multilocular sac traversed by membranous bands or septa, between which numerous coils of intestine were firmly impacted. The sac shewed evident marks of repeated attacks of inflammation, but with this exception, the intestines were sound, the gangrene being limited to the integuments over the tumour. About twelve feet of intestine, with a portion of omentum, were found to be protruded, the intestines being greatly distended and confined at different points by the membranous bands which traversed the interior of the sac. On making a careful examination of the tumour on the following morning, Mr. Adams discovered towards the upper part a kind of pouch, in which a considerable coil of intestine lay, and this he found to be the really strangulated portion. This discovery, however, proved to be one of very considerable difficulty, for it took him and Mr. Smith nearly an hour and a half to uncoil the large mass of intestine, and reach the seat of stricture. This fact was in itself quite sufficient to contra-indicate the performance of an operation, even if the patient had not been in the low state she was at the time of admission. (*Museum, Richmond Hospital.*)

4. *Ovarian Tumour.*—Doctor Law begged leave to submit a specimen of ovarian cyst of enormous size, taken from the body of a woman aged forty, who was admitted into Sir P. Dun's Hospital in May, 1840. The disease had been in existence about two years, and she attributed its origin to cold and fright. She was roused from her bed one night by a cry of fire, ran out of the house with very light clothing, and was chilled by the night air. Shortly afterwards she felt pain in the lower part of the abdomen, and after some time observed that the belly began to enlarge. The abdomen was at this time enormously distended, the distention being so great as to render the diagnosis of visceral disease both difficult and uncertain. She complained merely of the weight and size of the abdomen. Dr. Osborne, having tried a variety of internal medicines without effect, thought it advisable to tap her. The operation was performed and repeated several times at intervals of about ten days or a fortnight. On each occasion a small quantity of fluid of a turbid, milky appearance was removed, which, on being left at rest, separated into two portions, a thin watery fluid, and a sediment resembling wet starch or flummery. These operations relieved her to some extent, but the size of the abdomen remained nearly stationary, and the fluid drawn off continued to exhibit the same characters. She was tapped altogether fourteen times. The last operation was performed on the 28th November. She complained of illness on the next day, and had a severe rigor followed by oppressed breathing, feebleness of pulse, and coldness of the extremities. She complained of tenderness at the seat of the puncture, but not of general tenderness of the abdomen, and could bear pressure without inconvenience. Stimulants were employed, but without effect; she remained in a state of collapse until the following Thursday, when she expired. On making an incision through the abdominal parietes, the tumour was found to be closely adherent to the anterior wall of the abdomen. There was some slight effusion of serum into

the cavity of the abdomen mixed with a few flakes of lymph, but there was little vascularity. The tumour was of immense size. It proved to be an enormous ovarian cyst. In some places the sac felt tolerably smooth, in others it was rendered rough and uneven by a number of processes, having a loose parenchymatous structure somewhat resembling the placenta, and projecting into the interior of the sac, which contained a quantity of the turbid fluid already described, mixed with hydatids. Dr. Law observed, that a number of round tumours projected into the cavity; they were apparently of a malignant nature, and seemed to have originated in a more recent morbid process.

4. *Enlargement of the Heart.*—Dr. J. Duncan said, that the case he was about to lay before the meeting was that of a man, who had been attacked with paralysis about five months ago. On admission he was put under treatment for the paralysis, but after some time his case appeared so hopeless, that the treatment was discontinued, and the man was transferred to another ward. He then caught cold, and an attack of pneumonia set in, accompanied with symptoms which led Dr. Duncan to think that he had disease of the heart. Under proper treatment the pneumonia subsided, but the symptoms characteristic of an affection of the heart continued. What chiefly led Dr. Duncan to suspect disease of the heart, was the anxious expression of the patient's countenance. The action of the heart was rapid and its impulse violent; there was also considerable dulness extending far beyond the limits of the præcordial space, but masked by the state of the stomach, which was distended with air, and conveying to the ear that peculiar sound which has been very significantly termed tympanitic dulness. There was a slight disproportion also between the relative force of the pulsations of the heart and of the radial artery; but it was almost impossible to distinguish anything like bruit de soufflet over the region of the heart, while it was quite loud and distinct over the ascending aorta. On dissection the left ventricle was found to be enlarged and hypertrophied, and there were several semi-calcareous spots on the valves of the aorta. The carneæ columnæ attached to the mitral valve were also greatly hypertrophied; the rest of the heart was sound. The brain was firmer than natural, and this is a condition which Dr. Duncan thinks he has frequently observed in persons of intemperate habits. There was evident disorganization of the substance of the brain in the right hemisphere, not such as would result from the disorganization of effused blood, nor had it the characters of ramollissement; it appeared rather like an effusion of whey-coloured fluid, which was retained in its position by the cellular tissue of the brain. The patient had paralysis of the left side.

5. *Loss of the Corpora Cavernosa.*—Mr. Hill exhibited a very curious condition of the penis. He could give no account of the case, as the condition alluded to was not discovered until after death. He observed that the penis presented a very flaccid appearance, in consequence of the absence of the corpus cavernosum.

The glans was of the usual size and colour, but hung down as if connected to the root of the penis only by integument. Immediately above and behind the glans was a fistulous opening, extending from which, along the dorsum of the organ, was a linear cicatrix of two and a half inches in length. Opposite the posterior extremity of this cicatrix, and in the inferior surface of the penis, was another fistulous opening leading into the urethra. On introducing a probe into the urethra through the natural orifice, it passed out at the opening behind and above the glans, the urethra being impervious between this point and the inferior fistulous opening, through which an instrument could be passed into the bladder. On removing the integuments, which were perfectly healthy, the corpora cavernosa were seen terminating abruptly about two and a half inches behind the glans, the corpus spongiosum being continued forward to the glans, but reduced to the size of a crow-quill, and very much condensed in structure. The history of the case was unknown, but it was probable that the penis had been the seat of violent inflammation, which had produced sloughing of the anterior portion of the corpora cavernosa.

6. *Contraction of the Aortic Opening.*—Dr. Graves exhibited a specimen of disease of the aortic valves sent to him for presentation by Dr. Orpen, of Cove. The patient, a young man aged 27, was visited on the 16th May, 1840, by Dr. Orpen, who found him labouring under feverish symptoms, with dyspnœa, hard cough, severe pain in the left side, and violent action of the heart. There was dulness over the præcordial region, strong impulse, and bruit de soufflet; over the ascending aorta there was evident bruit de rape. Under active and energetic treatment the disease gradually declined, and the patient continued tolerably well until the following September, when he was attacked with severe epistaxis, followed by symptoms of anasarca of the face and lower extremities. On the 5th of October Dr. Orpen found the impulse of the heart still remarkably strong, the pulse tense and jerking, throbbing of the carotids, loud and tumultuous valvular murmurs, with severe lancinating pains in the cardiac region, and great depression of spirits. From this time the dyspnœa, anasarca, cough, and symptoms of cardiac disease continued to increase, and the patient sank on the 16th of the following November. At his first visit Dr. Orpen had made the diagnosis of pericarditis with hypertrophy of the left ventricle and valvular disease. On dissection the pericardium was found to contain nearly three pints of clear brownish fluid; its internal surface was thickly coated with lymph, as was also the surface of the heart. The left ventricle was hypertrophied and dilated; the aortic valves thickened, and containing numerous ossific points along the free margins; aortic opening contracted so as scarcely to admit the point of a finger.

Third Meeting, December 12th, 1840.

Doctor O'Beirne in the Chair.

1. *Specimen of the Effect of a Ligature upon the femoral Artery.*—Professor Harrison said he had lately had an opportunity of examining the artery of a man who had been operated on for popliteal aneurism about eight or nine years ago in the Richmond Hospital. The case had been under the care of the late Dr. M'Dowell, who took up the artery in the upper third of the thigh, and the man was discharged cured in the course of a few weeks. He continued to enjoy good health until a short time since, when he was attacked with bronchitis, for which he was taken into Sir Patrick Dun's Hospital. At the time of his admission he was in a state of great exhaustion, and survived only a few days. On dissection, the lungs were found to be emphysematous, and exhibited the anatomical characters of bronchitis. There was nothing remarkable in the heart, except some hypertrophy of the right ventricle, but the aorta shewed numerous traces of organic alteration. It retained its cylindrical form without any tendency to collapse of its walls, and at some points the sides of the vessel could not be approximated without considerable force. Its interior was found to be thickly studded with calcareous scales, covered in most places by the lining membrane, but in some the lining membrane was deficient over the calcareous deposit. At the place where the ligature had been applied upon the femoral artery, there was obliteration of the canal of the vessel to the extent of an inch and a half. Half an inch above this obliterated portion the profunda artery arose and appeared to be considerably dilated. Below it the femoral artery was pervious down to the ham, where it again became obliterated to the extent of about two inches. The articular arteries were enlarged.—(*Museum Trinity College.*)

2. *Permanent Patency of the Aortic Valves.*—Dr. Corrigan exhibited a specimen of permanent patency of the aortic valves with excentric hypertrophy of the left ventricle. With regard to the enlargement of the heart it presented the features which usually belong to this disease, and which make it contrast so strongly with the hypertrophy which accompanies disease of the auriculo-ventricular valves. In permanent patency of the aortic valves the apex of the heart is formed chiefly by the left ventricle; in disease of the auriculo-ventricular valves the apex is formed principally by the right. In the former disease the enormous enlargement of the organ produces a change in its situation, as was shewn by the specimen before him; the apex of the organ, instead of pulsating in its usual place, is felt beating as low as the seventh rib, and at the side of the chest in a line with the axilla. The heart not being able to find room in front turns round, passing outwards and a little backwards, so that a line drawn perpendicularly from the axilla would pass over its apex. The internal examination of the aorta in this case furnished a very good example of arteritis. The internal lining was in several places

elevated by the effusion underneath it. Dr. Corrigan exhibited drawings of two cases of a similar kind, taken about four years ago. The same phenomena of inflammatory action were observable in both. In the case laid before the meeting, the permanent patency was produced by a combination of two circumstances;—loss of elasticity in the aortic valves in consequence of disease, and deposition of lymph along their free edges, so as to render them incapable of closing the aortic opening. This was shewn by a simple experiment before the aorta was slit up for examination. By securing the pipe of a syringe in the upper part of the arch of the aorta, and filling the syringe with water the fluid could be driven in a full stream into the heart. But if the same experiment be made with a sound artery, the fluid cannot be forced through, and the valves will break sooner than permit it to pass. With respect to the mode of death in permanent patency of the aortic valves, the patient dies, not of apoplexy of the lungs or brain, but from weakness of the muscular fibres of the heart. The patient suffers greatly from a tendency to swoon, passes into a state of syncope and exhaustion, and dies with effusion into the lungs, or some pulmonary affection. One of the most remarkable symptoms of this disease is a visible pulsation of the arteries of the neck and upper extremities. The pulsation of the brachial and radial arteries is better seen when the arm is held up with the hand above the head. In the case detailed by Dr. Corrigan, the latter symptom was absent for some time before the patient's death. The reason of this was, that the heart was so much enfeebled that it was not able to propel a column of blood to that height; in fact in such cases, towards the termination of the patient's life, the pulse at the wrist disappears when the patient raises his hand for some time above his head. This symptom, therefore, shows the near approach of death. Another symptom was partial fremissement felt over the left ventricle; this, however, was only temporary, and there was no disease in the valves. A third circumstance was, that the bruit de soufflet was not so distinct as it is in many cases of this disease, in which it is heard plainly along the line of the sternum. The anomaly arose in this case from the shape of the patient's chest, the front of which was bowed out in a very remarkable manner, so as to allow a considerable portion of lung to intervene between the surface and the aorta. (*Museum, Digges-street.*)

3. *Aneurism of one of the Sinuses of Valsalva.*—Mr. Carmichael said that the subject from which the heart before him was taken, was a man aged thirty-two, who had laboured for a long time under great depression of spirits from disappointments in life. Mr. Carmichael had not seen him for some time, being away from home. On his return he understood that he had been for a considerable time labouring under illness, perhaps from eight to ten months. His breathing was considerably affected, and he had occasional bloody expectoration. On examination the impulse of the heart was felt over a larger space than usual. There was also bruit de soufflet, but no irregularity of pulse, or throbbing of the vessels of the neck. A few

days before his death he had expectoration of frothy matter tinged with blood, with severe fits of dyspnœa, his face became swollen, his lips blue, and he died with symptoms of asphyxia. The *post mortem* examination was made by Mr. Smith. The pericardium was found to contain about six or eight ounces of fluid; and the capacity of the left ventricle was increased considerably, but its walls were not hypertrophied. The right auricle contained a large quantity of firm, yellow fibrine. The auriculo-ventricular, the aortic, and pulmonary valves were all normal, but one of the sinuses of the aorta was dilated so as to form an aneurismal sac, which pressed on the pulmonary artery at its origin. (*Museum, Richmond Hospital.*)

4. *Caries of the temporal Bone.*—Mr. Hamilton said he was anxious to lay before the meeting an extremely interesting specimen of caries of the petrous portion of the temporal bone. The portio dura, as was well known, might become paralysed, from local injury, and also from disease of the brain, but there was another cause of paralysis, namely, disease of that portion of the temporal bone through which the seventh nerve passes. This, however, was a very rare occurrence. Dr. Abercrombie has given only one case of it, and that on the authority of another person. The subject of the case detailed by Mr. Hamilton was aged fifty-five. He was admitted into the Poorhouse about a month since, and placed under the care of Dr. Kirkpatrick, to whom Mr. Hamilton was indebted for the case and specimen. At this period he had paralysis of the right side of the face. He spoke thickly, and was deaf, his cheek was puffed out, the corner of his mouth drawn down, and he could not close the eye, although the eyebrow and eyelid of that side were lower than those of the left side. The upper part of the face on the left side contrasted strongly with the right, the former being contracted and wrinkled in numerous lines along the forehead, from the action of the occipito-frontalis and corrugator supercilii, while on the paralysed side all was smooth and inexpressive. He also complained of difficult deglutition. The sensibility of the paralysed side was unaltered, with the exception of a slight degree of numbness. He complained much of pain in the ear of the affected side, occasionally so intense as to prevent sleep. On these occasions he wandered a little at night, but his intellect appeared to be unimpaired. There was a free discharge of thin pus from the ear. His pulse was hard, about 100, his tongue coated with rough fur. He stated that he had suffered from noise in his ear about two years previously, but until within the last twelve months had no deafness or discharge from the ear. About two months since he was attacked with pain in the side of the head, and about three weeks afterwards the right side of the face became paralysed. Shortly after admission he was blistered and put under the influence of mercury, but without effect, and he died on the 5th of December. His intellects remained clear to the last. The diagnosis made during life was disease of the portio dura from caries of the temporal bone. On opening the skull, some difficulty was experienced in removing the brain, which was found to depend on an intimate adhesion which existed between the brain and dura mater over the petrous portion of

the temporal bone, and when the brain was removed it left behind it a small, nipple-like projection. The brain was of a very red colour from the minute injection of the vessels of the pia mater. There was an effusion of clear serum at the base of the brain, but none whatever in the ventricles or elsewhere. The nipple-like portion of brain had been left behind in consequence of the intimate adhesion of the arachnoid of the dura mater, and of the substance of the brain at this spot, and also a partial softening of the brain in this situation. On raising the nipple-like portion, the portion of bone corresponding to it was found to be carious, of a greenish colour, and deprived of its dura mater, its cellular structure was also infiltrated with thin, fetid pus. The seventh nerve appeared to be quite healthy up to the point where it entered the petrous portion of the temporal bone, and was also healthy from the point of its exit, but Mr. Hamilton thought that it was diseased in the intermediate portion, where it passed through the cancellated structure of the bone. He had not divided the bone, as the preparation had been only a short time in his possession, but hoped to be able to lay the dissection before the next meeting of the Society. The only other remark he had to make was, that with respect to the difficulty of swallowing, of which the patient complained, he thought it might be explained by connexion between the submastoid branch of the seventh nerve and the glosso-pharyngeal.

5. *Acute Pneumonia in Children.*—Dr. Lees said he was anxious to lay before the meeting two pathological specimens, which possessed some claims to notice. One of these was an example of acute pneumonia in a child two years old; the other was an instance of subacute pneumonia with carnification in a child about eight months old. The first child had been under his care about three months ago for jaundice. He was again called to see it about a week ago, and found it labouring under the usual symptoms of acute pneumonia. It was a very feeble and delicate child, and died on the following day. In addition to extensive congestion, the lower lobes of each lung presented very well marked specimens of acute pneumonia. The other lung was that of a child to whom Dr. Lees had been called about four days previously. He had found it labouring under symptoms of scarlatina, and there were no very prominent symptoms of any pulmonary affection. The child sank rapidly, and died on the following day. On examination after death, the lung was found to be extensively hepatized, and to present in various situations distinct spots of lobular pneumonia.

6. *Fungus Hæmatodes.*—Dr. Hutton said that as he was not able to present the recent parts in the case, which he was about to lay before the Society; he would beg leave to exhibit a cast of them, taken by Mr. Smith, which he hoped would render the description more intelligible. The case was one of fungus hæmatodes, which grew to a very great extent, and occupied the situation represented by the cast. The tumour was seated in the subclavicular region, extending downwards and forwards as far as the nipple; upwards under the clavicle, so as to press on the brachial plexus, and outwards and backwards under

the scapula as far as its posterior margin. It lay upon the ribs, to which it was attached but slightly, and which had not participated in the disease. Its base was in general of a hard, gristly consistence; but some parts of the tumour were soft, and its surface was tolerably regular, and at one point there was a superficial excoriation, from which, during life, an ichorous discharge exuded. The arm and forearm were œdematous. The base of the tumour was discoloured, the skin being injected with a vast number of minute vessels, chiefly veins. Dr. Hutton said that the drawing he was about to exhibit would convey a good idea of the appearance of the disease, although taken from another patient.

The subject of the case was a man aged 30, who was seen for the first time by Dr. Hutton on the 10th of August, 1840. He stated to Dr. Hutton that the glands of his neck had suppurated some time previously, but at this period they were healed up, and his general health was good. He had a tumour in the vicinity of the axilla, not discoloured, tolerably firm and elastic, and about the size of half a cocoa nut. This gradually increased in size, its progress being chiefly in the direction of the shoulder, clavicle and mamma, but it was not attended with much pain, and the patient remained free from constitutional symptoms until about two or three months before his death, when he began to lose flesh, and suffer from acute pain along the brachial nerves, depriving him of rest. He had some pain in the tumour, but it was trifling compared with the pain of the arm. He then began to complain of gastric derangement, had night sweats, and ultimately sank worn out by the disease. On examination, the tumour was found to present a very well marked specimen of cerebriform disease. The ribs beneath the tumour were free from disease, and there was no inflammation of the subjacent pleura, but its cavity contained a quantity of sero-sanguineous fluid. Dr. Hutton said that in connexion with this case he might mention, that a few days before, a child was brought to the Richmond Hospital, about two days after birth, with a tumour about the size of a walnut over the frontal sinus. It was firm and elastic, and conveyed to the touch a sensation similar to that which is felt when blood is effused under a fascia. The mother said that the child was born with the tumour. It was at first doubtful whether it was to be regarded as an example of cerebriform tumour, of hernia cerebri, or of nævus. The skin over it was discoloured, but there was no pulsation in it, nor was it affected by pressure. The child appeared well nourished, and in tolerably good health. A few days afterwards the tumour increased in size, and then enlarged at various points. The child is still living, and about six weeks old. The tumour now measures eight inches by six inches and a half. It hangs down over the child's nose, pressing on it, and impeding respiration, so that the mother is obliged to raise the tumour with her fingers to allow the child to suck. Dr. Hutton observed, in conclusion, that he thought the case a very curious one, and was disposed to look upon it as a case of intra-uterine cerebriform tumour, inasmuch as the tumour was born with

the child, and was about the size of a walnut two days after birth. (*Museum, Richmond Hospital.*)

7. *Fatty Degeneration of the Liver.*—Dr. Stokes exhibited the liver of a patient labouring under pulmonary consumption, who had been under the care of Dr. Lees. The lungs contained a large quantity of tubercles, but the principal point of interest attached to the case was the state of the liver, which presented that fatty degeneration which had been so well described by Louis. Louis states that nearly one-third of the consumptive cases in Paris have the liver in this condition. Dr. Stokes has seen it occasionally, but thinks that the number of patients affected in this way here is much smaller than in France. The disease is more common in females than in males. Louis states that there is no symptom by which it may be diagnosed, unless enlargement of the left lobe can be detected. The case furnished an example of the law propounded by M. Serres, that the diseased condition of organs in man represented their normal condition in the lower animals. In many fishes the liver is loaded with fat.

Dr. Stokes also showed the kidney of the same subject, which presented a state of disease which he was disposed to look upon as œdema.

Fourth Meeting, December 19th, 1840.

Professor Harrison in the Chair.

1. *Caries of the Temporal Bone.*—Mr. Hamilton said that at the last meeting he had brought forward a preparation of caries of the temporal bone with paralysis of the seventh nerve. On that occasion he had not been able to show the state of the nerve throughout its whole course, and had suggested that it was diseased in that portion which passed through the petrous portion of the temporal bone. Since that period he had examined the preparation more minutely, and found that the nerve, in passing through the bone, had been destroyed to the extent of about one-eighth of an inch. The nerve could be traced from the meatus internus to the carious part of the bone, where it ended, and in like manner it could be traced from the stylo-mastoid foramen up the fallopian canal to the situation of the caries, where all traces of its original structure were lost. There was a difference between the two portions of the nerve; the upper portion was more vascular, and ended in a small bulb, the lower portion was pale, and apparently natural. From the stylo-mastoid foramen to the cheek the nerve and all its branches were quite healthy, thus confirming an interesting physiological fact, viz., that the nerve is indebted to the brain for its supply of nervous energy alone, and that it is nourished and preserved by the arteries of the part through which it passes. Mr. Hamilton said, that since the last meeting he had met with another case of the same description, detailed by Dr. J. Gregory. The patient had received a blow of a stone in the side of the

head, followed by loss of hearing and paralysis of the same side of the face. No ulterior consequences followed, and the patient died afterwards of phthisis. On examination, a portion of the nerve was found to be destroyed in its transit through the petrous portion of the temporal bone.

2. *Disease of the Spine.*—Doctor Bigger exhibited the recent parts in this case. The case was one which had occurred under the care of Dr. Walsh, at the Adelaide Hospital. The patient, a girl, named Mary Hetherington, and about elevn years of age, was admitted wih symptoms of disease of the cervical vertebræ. She stated that she had been a long time ill. Two days after her admission into the Adelaide Hospital her symptoms were as follow: The head hung forwards on the chest, she was unable to raise it without great pain, and when raised she was obliged to support it with her hands. She was unwilling to move in almost any direction, and could not lie on her back for a moment without a sensation of fainting. Her treatment was such as is generally adopted in cases of the kind; namely, local antiphlogistics, irritants, and revulsives. From the pain experienced on moving the head, it was suspected that she had disease of the cervical vertebræ; but as there was no remarkable local tenderness, no tumour, or appearance of fluctuation, some doubts were entertained as to the precise nature of the case. Respiration and deglutition were quite free and natural. Up to the 14th of December, the pain continued to increase, and she then became remarkably heavy, sleepy, and stupid, with dilated pupils, foul tongue and accumulation of sordes on the gums and teeth. She then sank into a state of stupor, but could be roused when shaken, and when roused, would give correct answers to questions. On the evening of the 17th, she had convulsions and coma, and continued in a state of delirium with coma and subsultus tendinum, until the 19th, when she expired. On examination, an abscess of considerable size was found between the vertebræ of the neck and the œsophagus. The abscess was seated, as shown by Dr. Bigger, between the posterior wall of the œsophagus and the anterior portion of the bodies of the cervical vertebræ. But, contrary to the usual effect of abscesses in such situations, instead of producing absorption of the anterior portion of the bodies of the vertebræ, it left them quite uninjured, and seemed to have limited its destructive operation to the intervening cartilages, some of which were completely absorbed, so that the matter of the abscess lay in contact with the sheath of the spinal marrow. Dr. Bigger thought it probable that the disease commenced in the intervertebral cartilages, and that nature had made an attempt to procure an external exit for the matter, but being confined by the fascia, it made its way in the direction of the spinal sheath. There was considerable thickening of the membranes of the spinal cord, and an effusion of pus into its cavity with considerable redness and vascularity of the cord itself. It was a curious fact, that there were so few symptoms present indicative of the nature of the disease. There was a considerable effusion of fluid into the ventricles of the brain.

3. *Glanders in the Human Subject.*—Dr. Hutton said that as four or five cases of glanders in the human subject had, within a comparatively short period, come under his own notice, or that of the surgeons of the House of Industry, he was anxious to lay them briefly before the Society, and also to exhibit a specimen of the disease as it had manifested itself in the lungs of a patient who died about two days before. Previous, however, to entering on this case he would read the details of another, in which some experiments were made with the view of testing the character of the poison, and ascertaining whether it was glanders or not. One of the results of these was, that an ass, inoculated with matter taken from the patient, was in due course attacked with the disease. The case was recorded by Mr. Rutherford, one of the resident pupils of the Hospital, for whose accuracy Dr. Hutton could vouch. The subject, a young man named P. Kelly, aged about twenty, was admitted into the Richmond Hospital on the 26th of August, 1838. On admission, his face presented that peculiar aspect which is so characteristic of glanders; the left half was very much swollen, tense and shining, the redness fading away gradually and becoming lost in the surrounding integuments. Both eyes, but particularly the left, were closed from inflammation and œdema of the lids. The left ear was swollen, of a dark red or livid colour, and the patient was quite deaf on that side. The glands of the left side of the jaw and face were enlarged and indurated, and he complained of a feeling of numbness in the whole of that side of the head and face. About an inch and a half in front of the ear there was a large flaccid vesicle; there were also two pustules on the face, one of which had burst and was sloughing. On various parts of the body there were numerous pustules in different states, from the first to the more advanced stages. In the first stage, the skin in the situation where the vesicle afterwards occurred was of a peculiar pale, whitish appearance; in the next stage the vesicle appeared, not however, exactly in the centre of the pale spot, but rather to one side. In a more advanced stage it became seropurulent, then pustular, and some time afterwards the pustules began to shrink and become depressed in the centre. The mucous membrane of the mouth was inflamed and covered with a viscid adhesive mucus; the schneiderian membrane was also inflamed, but there was no discharge of purulent matter from it. The patient had the ordinary symptoms of irritative fever; his head was confused, but he had no pain or raving, his bowels rather free, his urine high coloured. He stated that he had been always healthy, and when questioned as to the nature of his occupation, said that he had been employed for the last four in months attending horses which were labouring under glanders, that he had been retained specially for that purpose, and groomed the animals once a day. He did not recollect that he had had a wound or sore on either hand, he had not drank out of any vessel used by the horses, nor had he slept in the stable. He attributed his illness to fatigue after a long journey, and said that the first symptoms he had noticed were pains in his knees followed by headach. Four days after-

wards the left side of the face and head began to swell, with increase of fever and depression of strength. On the 27th, the day after admission, his symptoms were progressing; the tumefaction of the head and face increased, and several livid vesicles made their appearance, accompanied by severe pain in both jaws. Several vesicles now began to show themselves on the anterior part of the arms and chest, his pulse became smaller, and rose to 120, his respiration was somewhat suspirious, his breath fœtid, and he felt pain when the ends of the long bones were pressed on in the vicinity of the joints. His head was still confused, but he had no raving. Towards eight o'clock in the afternoon there was a further exacerbation of his symptoms. He made water tolerably well, but did not seem to be aware of passing it. He was ordered to take ten grains of sulphate of quinine three times a day. On the 28th the eruption was still extending; his pulse was 140, and weak, his thirst excessive, and he raved frequently. At half-past, 3 P. M., he was restless and tossing about in bed, with constant involuntary motions of the lower extremities, quick small pulse and hurried respiration. Twelve new spots had now made their appearance, his fever and delirium were increased, and he was passing both urine and fæces involuntarily. There was a discharge of sanious fluid from the left ear, but none from the nostril. On the 29th a further exacerbation of symptoms took place. The left elbow joint was swollen and pain ful; the pustules increased in number and size, and were intermixed with gangrenous bullæ; and along the internal and anterior parts of the thighs, in the situation of the absorbents, pale, rose-coloured swellings began to appear. His breath was fœtid, and the odour from his whole body almost insupportable. He had no discharge from the nostrils, but on examining the nose, Dr. Hutton observed a small ulcer on the left side of the septum narium. The man died during the course of the night. On examination a great number of small, circumscribed abscesses or purulent depots were found in the extremities; as many as thirty were found in the left arm. There were two or three of the same kind in the pectoralis major, and several of the same description in the recti of both thighs, all circumscribed and imbedded in the muscular tissue. In the left lung there was a small depot of pus, surrounded by a dark, livid border; another of the same kind was discovered in the right lung. On the posterior surface of the heart there were dark-coloured spots, and the blood was remarkably fluid in all the vessels. There was a deposition of pus under the mucous membrane of the larynx, and also on the posterior surface of the epiglottis; the left half of the face was in a semi-gangrenous state.

Shortly before this, another case of the same kind had occurred in the female ward. An ass which had been procured for the purpose, was inoculated with purulent matter taken on the fourth day, from the patient. No disease was produced. On the 27th of August, the day after Kelly's admission, the experiment was again repeated on another with matter taken from the vesicles and pustules on his body. The lymph was inserted into the left nostril of the animal, the pus into the opposite one;

it was also inserted into the ear. On the following evening the ass appeared unwell, and next day had enlargement of one of the glands of the jaw on the left side, with increased heat and tenderness, accompanied by feverish symptoms. The left ala nasi swelled, and the line of absorbents from this to the glands on the side of the jaw could be distinctly traced. Next day there was a profuse watery discharge from both nostrils, particularly the left, and on the following day, the fifth after inoculation, the discharge was purulent. Soon afterwards the animal was killed with nux vomica, it having been previously ascertained by Mr. Ferguson, V. S., that the animal was really glandered. On examination, a cluster of pustules having a tubercular aspect were found in the left nostril ; in the right there were circular patches of ulceration. Similar ulcers were found in the interior of the stomach, and there was a cluster of pustules in the anterior lobe of one lung. There was no morbid appearance in the larynx or trachea. Dr. Hutton exhibited several drawings to shew the condition of the various parts, particularly the nostrils, stomach, and lungs. The next case, to which he would merely allude, as it was about to be published by Dr. M'Donnell who had charge of it, had occurred a short time ago at the Richmond Hospital. The patient was admitted for an accident of which he recovered. but before he left the Hospital he was seized with an affection of the joints, followed by an eruption of pustules along the side of the nose, which were recognized as being connected with glanders. Mr. Smith procured some of the matter, and inoculated an ass, which in the course of four or five days became sick, and was subsequently attacked with glanders. The same phenomena as observed in the latter case of inoculation were present; the cartilages of the joints were also found to be ulcerated. Dr. Hutton exhibited some drawings, to shew the condition of the parts. He also exhibited a drawing of a case which had occurred some years back at the Richmond Hospital under the care of the late Dr. M'Dowell before the disease was sufficiently known. The drawing had been made by Mr. Conolly, and Dr. Hutton observed that he had represented the features of the disease with great accuracy, and had depicted most faithfully the white areola which encircles the vesicles. Since that period the areola has been invariably found to be present in every case, and is regarded as one of the pathognomic features of the disease. It has been noticed independently by Dr. Hutton, Mr. Adams, and other observers, and forms one of the marks by which the disease is distinguished from phlebitis. Dr. Hutton said he should next proceed to read the notes of a case which had recently come under his observation. The patient, J. Butler, a boy about five years of age, was admitted into the Richmond Hospital on the 13th of December, 1840. It was stated that he had been always a fine, healthy child up to the period of his illness. He complained at first of sickness and pain in his bowels, and on the following day had pains in his knees. About three days afterwards the left side of the face and eyelid become swollen, and the usual symptoms of irritative fever set in, accompanied with

thirst, restlessness, quick pulse, and scanty urine. On the 5th of December, the fever was increased, and the other side of the face was involved in the swelling; on the 7th a number of pimples with white tops appeared on the inflamed surface. On the 13th, the date of his admission, his face was greatly swelled and inflamed, and presented a number of pustules mixed with several ash-coloured ulcers; he had also an eruption of pustules over his body. Some of these were flattened and somewhat vesicular, like chicken-pock, some were conical and pustular, some in a state of incrustation. Around some of them, particularly those which were in the earlier stage, the peculiar white areola was still visible. Several of the joints were swelled and painful, and there was evident effusion into the left elbow joint. The child was extremely feverish and irritable, tossing about in the bed, and raving; the smell from his body was extremely offensive. He continued in this way with little change in his symptoms until the 16th, when he expired. All that could be learned of his history was, that the father was a labourer, and kept a horse which was said to be labouring under a discharge from his nostrils, the result of cold, but Dr. Hutton said he had not as yet examined the animal. On examination after death there was an effusion of pus discovered in the left knee joint. In the thorax there was a small collection of pus close to the edge of the left lung. The lung was of deep red colour, and presented several ecchymosed spots on its surface, and contained two small abscesses. The right lung presented a few flattened tubercles. These were pointed out to the attention of the meeting by Dr. Hutton. (*Museum, Richmond Hospital.*)

4. *Chronic Rheumatic Arthritis of the Jaw.*—Mr. Adams presented specimens of chronic rheumatism of the joints, or as it has been termed chronic rheumatic arthritis. He had on former occasions exhibited specimens of the disease in almost every joint of the body, for as persons affected in this way generally die of other diseases, an opportunity is afforded for making post mortem examinations. For the specimens which he was about to lay before the Society, he was indebted to the kindness of Dr. Kirkpatrick, and Dr. Duncan. In this instance the patient died of acute inflammation of the larynx. The appearances before him were those of an advanced stage of the disease, but in which the morbid alteration was not complete. Mr. Haygarth of Bath, the only author who has alluded to this form of disease, has termed it nodosity of the joints. He has described the disease in the hands, and it has been also noticed by Sir B. Brodie. Mr. Adams exhibited a cast of a hand affected with this disease, and observed, that no one had as yet described a similar condition of the foot or of the jaw. The disease was said to occur only in persons advanced in life, but it has been seen in persons from thirty to forty. In the case before him there was deformity both of the hand and foot. The disease was attended with pain, frequently of an acute character, and the usual phenomena were observed after death, osteitic deposits and destruction of the articular cartilages. Mr. Adams said he would not detain the meeting with any remarks on this

subject, as the disease had been fully described by him in the Cyclopædia of Anatomy and Surgery, edited by Dr. Todd. He believed, however, that the state of the lower jaw had not been described by any writer, as far as his experience went. In the case before him the jaw was affected in a very remarable manner, and in order to convey a correct notion of the appearance of the parts during life, he would beg leave to send round a drawing taken by Mr. Conolly. On examining the lower jaw, Mr. Adams found the head of the bone greatly enlarged; the condyle was also augmented in size, being nearly an inch longer in its vertical direction than it is in the normal state. The glenoid cavity, instead of retaining its natural shape was quite oval, and like the glenoid cavity of the scapula, and instead of the maxillary eminence, in front, there was one uniform oval depression. The aspect of the patient, although contorted, differed very remarkably from the case brought forward by Mr. Smith, in Mr. Adams' case there being hypertrophy of one side instead of atrophy. The disease is not always confined to the ends of the bone, but sometimes extends to their shafts, Mr. Adams said he thought that this affection of the temporo-maxillary articulation had not been noticed by writers. In the case which he brought before the meeting, the progress of the disease had been watched, and the subsequent dissection had proved the diagnosis to be correct. He would not make any farther observations on the subject, as he had already published his views in the Cyclopædia of Anatomy and Surgery. (*Museum, Richmond Hospital.*)

On the Syphilitic Diseases of the Lung, by William Munk, M.D., Physician to the Tower Hamlets Dispensary.—From the period at which syphilis is generally thought to have originated, or at any rate from that when it first forcibly attracted the attention of the public and of the Profession, up to the latter end of the eighteenth century, a space of more than three hundred years, the study of its natural history, more particularly of its progress and of its tendencies under peculiar modifying influences, was but little regarded; writers on the subject giving themselves more to speculation than to observation: the few, indeed, who pursued the latter and only legitimate course, being overlooked and forgotten amidst the extensive and overwhelming literature which had year after year been accumulating on this subject.

Towards the end of the period above specified—in the year, that is to say, of 1784—Hunter gave to the world his great and important treatise on the Venereal Disease; a work which, to use the words of a distinguished living writer, "poured a flood of light not only on the natural history of the disease, but also on its pathology and treatment."

The merits of this work were so evident that it became at once, and as it were by acclamation, the guide for students and practitioners—the text alike of lecturers and writers. The latter did little more than follow out and yet further illustrate the various subjects discussed by Hunter; but few presuming to enlarge the boundary on which he trod. It seemed, however, as though the master-mind

had grappled with the whole subject; had embraced within his comprehensive grasp all possible ramifications of the disease; had solved the most difficult problems in the inquiry, and had left only to his successors the working out of some secondary points, which time and more important topics had allowed him but briefly to shadow forth.

Any formal discussion on the peculiar merits of this important work would now, indeed, be superfluous, public opinion having long since, and most justly, awarded to it the highest place among the modern contributions to our art. Hunter studied the subject practically; he carefully observed the phenomena that came before him, reasoned cautiously upon them, and then committed to writing and to the world his matured conclusions concerning the disease. Further than this he did not go. The work was the pure result of his own observations and reflection, unaided by the facts or doctrines of predecessors or cotemporaries.

Hunter was a surgeon, and in his day the demarcation between surgery and physic was better comprehended, and less infringed, than at the present time. His opportunities consequently of observing the disease must have had reference chiefly to it when occurring in those situations, the morbid affections of which have by common consent, and long-established usage, been consigned to the surgeon's care. The diseases of the general surface of the orifices of the body, as far as these are within the reach of the senses of sight and touch, of the bones, &c., are those with which the surgeon is chiefly busied; and syphilis, as affecting these parts, has been well described by Hunter. But the disease may fix itself upon other parts —upon parts not mentioned by Hunter or his followers; upon parts the diseases of which fall properly to the physician's province.

These circumstances will in some respects account for the late very general neglect of many internal syphilitic affections, the existence of which was fully recognized by the older physicians, and has either specially or incidentally been treated of in their writings. Perhaps the most evident, certainly not the least important of these, are the syphilitic affections of the lung, a subject to which my attention was first directed, when a student in Holland, by the writings of my esteemed friend Professor Schroeder van der Kolk, of Utrecht.* It is to Dr. Graves,† of Dublin, however, that the Profession in this country stand indebted for once more directing attention to this really important subject. In one of his clinical lectures published in 1835, he makes some highly interesting and practical observations on the disease, acknowledges that from the late Mr. Hewson he derived his first information concerning it, and expresses his surprise that the subject should for so long a period have been overlooked or neglected.

The records of our Profession abound, however, with illustrations

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* Observationes Anatomico Pathologici et Practici Argumenti, fasc. 1. Amst. 1826, p. 130.

† Renshaw's London Medical and Surgical Journal, vol. vii. p. 198.

of pulmonary disease, the existence of which was attributed, and as it seems justly, to the contamination of the system by syphilis. Morton devotes the seventh chapter of his well-known Phthisiologia to the special consideration of *phthisis à lue venerea orta*, and concludes his observations with the detail of a well-marked instance of the disease cured by mercury and sarsaparilla. "Etiam verum est," (says he,) "et in praxi non raro observandum venit, vere pulmonalem phthisin a mera sanguinis et humorum alteratione lue venerea facta originem suam ducere. Neque quidem mirum est cum tota humorum massa tam evidenter ab hujus morbi fermento alteretur et in statum colliquativum reducatur (quod a tumoribus malignis gonorrhœis et ulceribus hunc morbum usitato comitantibus apparet satis) si etiam hujusmodi tumores atque ulcera venerea, aliquando in spongioso et molli pulmonum parenchymate accidant unde phthisin vere pulmonalem insequi necesse est. Ego equidem potius mirari soleo luem venereamsaltem chronicam seu malè curatam unquam sine pulmonum ulcere et phthisi inde nata reperiri."

Sauvage,* partly on the authority of Morton, and in part from his own observation, admits, as the eighth species of secondary phthisis, syphilitica; a form of the disease which has been received likewise into the nosological systems of Cullen and Macbride.

Portal,† in the tenth section of his work, treats at length of this disease, and the late learned Dr. James Sims, in his observations on epidemic disorders, has the following remarks. "The kind of this disorder (phthisis) most commonly met with here, as well during this as other years, was such as took its origin from a bad crasis of the blood, rather than from any inflammation of the lungs. In many cases this seemed to be derived from a previous gonorrhœa, of which the person thought himself completely cured a year or two before. I would therefore advise every physician when called to a tabid patient whose manner of life may have thrown him in the way of such disorder, carefully to inquire whether they ever had any venereal complaint, as it is never to be disregarded in the prescription. This phthisis, though it did not differ materially in its symptoms from those to be described hereafter, yet required a very different treatment, mercury being the sole refuge, which never failed performing a cure when taken before the lungs had inflamed and suppurated."‡

In addition to the authorities above referred to, many of whom have, in corroboration of their general remarks, adduced instances of the disease, individual cases will be found recorded in the Acta Medicorum Berolinensium,§ by Hoffman,‖ Morgagni,¶ Tode,** Schwartze,††

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* Nosolog. Methodica.

† Observations sur la nature et sur le traitement de la phthisie pulmonaire. 8vo. Paris, 1792.

‡ Page 117. § Tom. ii. p. 92. 1718.

‖ Opera Omnia, tom. iii. p. 424. Obs. v. Phthisis Venerea.

¶ De Sedibus et Causis Morborum, epist. xxii. art 11.

** Societatis Medicæ Havniensis Collectanea, vol. i. 1774. Art. xxi. Venereæ phthisicæ felix sanatio ope mercurii sublimati corrosivi.

†† Dissertatio Observationes quasdem medicas continens. Gött. 1787. p. 13.

Meza,* Saucerotte,† and others. These names will, it is hoped, suffice to prove, that, as far as reputable authorities and a tolerable amount of antiquity are concerned, the idea of syphilis attacking the pulmonary tissues, far from being a newly-broached and novel doctrine, is in truth to be regarded as perfectly orthodox medical belief.

By every author above referred to, Dr. Graves alone excepted, the pulmonary affection induced by syphilis has in its nature been regarded as akin to, if not identical with, phthisis; whence the name phthisis venerea vel syphilitica, by which it has invariably been designated. Since the use, however, of the word phthisis has been confined within narrow limits, and has been regarded as identical with pulmonary tubercle, and these as terms mutually convertible, the propriety of such a term as syphilitic phthisis has indeed become somewhat doubtful. In the present day there exists a pretty general disbelief of any peculiar power possessed by syphilis of giving rise to tubercle, and as modern researches have satisfactorily shown, that scrofulous or tubercular cachexia is an invariable, and indeed necessary precursor of tubercular deposits, it is evident that tubercle, if at all, can under two circumstances only be regarded as venereal. These are, either when syphilis developes this pecular cachectic state, and thus by its agency, and therefore indirectly, generates tubercle, or when it occurs in an individual already cachectic or tuberculated, pursues its course with, and materially modifies these conditions.

In reference to the former of these it may be objected, that it is very doubtful whether syphilis has a greater tendency than any other severe disease materially disturbing the constitution, to induce a scrofulous state, and supposing that it does so, whether the resulting condition differs in any material respect, as regards nature or treatment, from the more commonly observed cases. Regarding the latter it may be urged, that the accidental co-existence of syphilis and tubercle, or of its prelude, scrofulous cachexia, particularly when the last named conditions have had a priority of being, will not justify our formally distinguishing and separating such cases from those of every-dayoccurrence, unless it be first shown that the cachectic state, and ensuing tuberculization, be materially altered in their course, symptoms, or essential treatment, by the co-existent contamination.

These, then, are but a scattering of the difficulties which surround us when we go to admit the existence of such a disease as syphilitic phthisis.

For the satisfactory determination of the question, we at present possess no sufficient evidence. The different subjects bearing upon it have either been wholly neglected or but theoretically discussed, and our information consequently is both vague and limited. First it would be necessary to define the meaning to be attached to the term syphilitic phthisis; and then to work out the investigation by an extended series of well-observed and carefully-collected facts. As the object of this paper is the illustration of those pulmonary diseases

* Acta Regia Societatis Medica Hafniensi, tom. ii. p. 211.

† Journal de Médicine, par Corvisart. 1812, p. 350.

which result directly and immediately from syphilis, syphilitic phthsis, the latter being used as above explained, cannot fall within the scope of our remarks. The only reason, therefore, in view, in this discussion, is that all the recorded examples of syphilitic pulmonary disease—examples from which indeed I shall have in part to draw my own conclusions—are incorrectly, according to my view of the case, chronicled as phthisis.

What then, it will be asked, is the intimate nature of the morbid action set up in the lungs by a syphilitic taint of system, if it be not tuberculization? My own observations, and the careful review of recorded cases, justify me, I think, in affirming, that inflammation is the action, and either the bronchial mucous membrane, or the pulmonary parenchyma, the immediate seat of that action: in other words, that syphilis displays itself in the lung under the varied forms of bronchitis, pneumonia, or broncho-pneumonia. I am not prepared to say, observes Dr. Graves, which of the pulmonary tissues is most usually attacked by the venereal poison, but I believe that it chiefly tends to the bronchial mucous membrane, although, like other animal poisons, e. g. those of measles and scarlatina, it may also occasionally produce pneumonia.

The remarks of Dr. Graves having reference to the chronic form of syphilitic bronchitis are amply borne out by Dr. Stokes, who by his account of the acute form of the same disease has made a most important addition to our previous information. His remarks being extremely valuable I shall quote them at length. "With respect to the bronchial system," says he, "we may observe the disease as an acute or more chronic affection. In the first instance it is analogous to the bronchial irritations of the exanthemata, of which I have seen a few interesting examples, while in the second there is a chronic irritation, which, when combined with the syphilitic hectic, and with periostitis of the chest, closely resembles true pulmonary phthisis. In the first of these cases I have observed, that after a period from the first contamination, the duration of which has not been determined, the patient falls into a feverish state, and presents the symptoms and signs of an irritation of the bronchial membrane. These having continued for a few days, a copious eruption of a brownish-red colour makes its appearance on the skin, and the internal affection either altogether subsides or becomes singularly lessened. Here we see the bronchial membrane taking on an action which is peculiar, and very different from its ordinary irritations. There is an inflammation only analogous to that of the exanthemata, and no doubt can exist that it is connected with the syphilitic poison. My friend, Dr. Byrne, whose situation as medical officer of the Lock Hospital gives him the greatest opportunities of observation, informs me that he has in many instances seen patients who had been formerly diseased, and who had come into hospital either for new sores or for gonorrhœa, attacked with intense bronchitis and fever. This attack would come on suddenly, and the distress was so great that bleeding had to be performed; the effect of which was, that soon after, a copious eruption, often combining the lichenous and squamous

forms, made its appearance, with complete relief to the chest. In some of these patients, on the day before the eruption, the stethoscopic signs had been those of the most intense mucous irritation, and yet when the skin disease appeared the respiration became either perfectly pure, or only mixed with an occasional rhonchus in the large tubes. The same gentleman has observed the reverse of this; as, when a syphilitic eruption has been repressed, the bronchial membrane has become much engaged, and the patient affected with general febrile symptoms. These phenomena subsided after bleeding and mild diaphoretics, which had the effect of restoring the cutaneous eruption. Here we heve an additional evidence in favour of the analogy between syphilitic bronchitis and that of the exanthemata.

The deservedly high position of Dr. Graves and Dr. Stokes, as authorities on all matters connected with thoracic pathology, renders my feeble testimony upon this point altogether superfluous; and their recorded statements are, it seems to me, amply sufficient indisputably to establish the existence of such a disease as syphilitic bronchitis, acute as well as chronic."

The chronic form of the complaint is in all respects the most interesting and the most important. It is the most usual form under which syphilitic bronchitis presents itself; and, when combined with some other morbid conditions often consequent upon the existence of the syphilitic poison in the system, is exceedingly likely to be mistaken for true phthisis, and thus to lead to an unnecessarily bad prognosis, and to be both incorrectly and inefficiently treated.

As secondary symptoms in general may show themselves at very different periods from the primary contamination, so may chronic syphilitic bronchitis originate at short or distant intervals from the original attack. Its order of occurrence, in relation to other secondary phenomena, cannot, I believe, in the present state of our knowledge, be positively indicated: but the observations I have hitherto made tend to show, that it is most usually observed late in the series. I have known it take precedence of the affection of the throat; but far more frequently it succeeds to this, the morbid action creeping gradually and slowly along the larynx and trachea into the bronchial tubes. In such cases the attack presents many of the phenomena, and follows much the same course, as common catarrh. There is first the affection of the throat, indicated by change of colour, slight tumefaction, a sense of roughness, and pain about the part, with some difficulty of swallowing. The voice may next become somewhat hoarse; there is tickling or irritation in the larynx; frequent, short, dry, teazing cough, and, after a time perhaps, sense of slight heat within the chest, soreness beneath the sternum, and more or less constriction. The character of the cough becomes now either much modified or altogether changed—a circumstance which depends on the persistance or cessation of irritation in the mucous lining of the larynx. Should it continue, the symptoms depending thereon are combined with those to which the bronchial affection gives rise, and are, according to their severity, proportionally modified; the cough, though still frequent, short, and teazing, is from time to time more or less

bronchial in its character, is attended with expectoration, seems to implicate the whole chest, is deeper toned, more sonorous, and preceded by a tolerably full inspiration. Should the laryngeal irritation entirely subside, the first-named characteristics of the cough cease, the last-mentioned becoming predominant, and ultimately existing alone. This, however, is but rarely the case; for the erythematous condition of the larynx commonly continues, and, giving rise to short and hacking cough, with occasional attacks of a bronchial nature, together present that resemblance to phthisis from whence has originated the mistaken diagnosis before alluded to.

From the inner membrane of the air-passages, when once affected, a secretion is soon poured forth; from the larynx at first of a tough, clear mucus, expelled with difficulty; from the bronchiæ, of a thinner, but, nevertheless, tenacious fluid, abundant in quantity, and, by its presence, obstructing the tubes, giving rise to wheezing and some shortness of breath. Its physical properties eventually alter; it loses, more or less rapidly and completely, the mucous character becoming abundant, purulent, and diffluent. This condition of the expectoration, when the attack is fairly established, has been alluded to by most writers. A brief continuance of this abundant purulent expectoration suffices to produce hectic, even if hectic of a syphilitic character has not already appeared. Commonly, however, some traces of feverish disease will be detected ere the expectoration arrives at this stage. In either case, indeed, it will be found that, upon the supervention of purulent expectoration, symptoms of a hectic type will appear, or, if already present, be materially aggravated.

In the sketch I have now given of the progress of this disease, I have taken, as an example, a well-marked case running a somewhat rapid course. In the majority of instances it will be found that the symptoms depending upon laryngeal or tracheal irritation persist for some considerable time alone, and are only gradually and slowly combined with those of bronchial inflammation.

From my own observation, I can say but little regarding the morbid appearances presented by the bronchial membrane when affected with syphilitic inflammation. I am glad, therefore, upon this point to be enabled to adduce the opinions of a gentleman of great experience, whose attention has for some years been given in an especial manner to the effects of syphilis upon the pulmonary tissues. My friend, Dr. P. D. Sadowski, in a communication with which he has favoured me, dated Prague, July 18, 1840, states, in reply to some inquiries, that a very common consequence of syphilitic bronchitis is ulceration of the membrane; that the individual ulcers are small in size, but exceedingly numerous, and may in some instances be detected over the greater portion of the membrane, even in the smallest tubes. The following case, which proved fatal in September, 1839, and was under my care for the last six weeks of the patient's life is confirmatory of the opinion above expressed. A young gentleman, then nineteen years of age, contracted syphilis in Paris during the summer of 1837. He was then commencing a tour, which it was intended should extend over a great part of the

Continent, in company with his parents and two sisters. A natural desire for secrecy, and a somewhat rapid change from place to place, were obstacles to efficient treatment and proper medical superintendence. He took mercury, but did so both irregularly and inefficiently. The primary symptoms subsided, and on reaching Vienna, where he wintered, he underwent a course of sarsaparilla. By this he was much benefited; but, in the autumn of 1838, being then in the North of Italy, was attacked with sore throat. To this there supervened hoarseness, ulceration of the soft palate, cough, a copper-coloured eruption on the skin, nodes, nocturnal pains, and heavy perspirations. Matters became gradually worse, and I saw him for the first time in August, 1839, about three months after his return to England. He was then confined to bed, was exceedingly emaciated and debilitated, had frequent and distressing cough, copious purulent expectoration, together with symptoms which left no doubt of the existence of laryngeal disease. The chest was perfectly sonorous; but an abundant coarse mucous rhonchus was evident over the whole lung. He was ordered quinine and iodide of potassium, with anodynes at night, but sank perfectly exhausted on the 15th of September. Numerous minute ulcerations existed on the mucous lining of the larynx; there were none in the trachea; but below the bifurcation they again appeared, becoming more and more numerous the smaller the tubes. In the smallest of the bronchiæ examined, there appeared one continuous sheet of ulceration, the individual ulcers having, as it seemed, run one into the other. The bronchiæ were filled with purulent matter, and the inferior lobes of the lung were slightly congested.

The action of syphilis on the pulmonary organs is sometimes evidenced in the form of pneumonia. Of this I have now seen two interesting examples, and some of the recorded cases to which I have above alluded would certainly appear to be of this nature. The case of a soldier, "Ex male curata lue venerea phthisicus factus," detailed in the Acta Medicorum Berolinensium, was evidently of this kind. "In thorace," (writes the reporter,) " dexterpulmonum lobus maximam partem erat consumtus pars residua *pure* scatebat cujus etiam magna quantitas in cavitate hujus lateris apparebat. Sinister pulmonum lobus pleuræ erat adnatus substantia ejus extima apparebit integra interior autem vesiculosa substantia erat *purulenta et hinc inde vomicis pure repletis obsita.*"*

In the cases of syphilitic pneumonia which have fallen under my observation, both the local and general symptoms have been more severe than in the ordinary run of cases of syphilitic bronchitis. There has been more marked disturbance of respiration, an expression of countenance indicative of considerable distress, with persistent fever-

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* No mention is made in this case of the existence of tubercles; whilst in the narration next ensuing their presence is particularly referred to. From this circumstance it seems legitimate to conclude, that they were not present in the case quoted in the text, and consequently, that the disease under which the patient laboured was truly pneumonitic in character.

ishness; among the symptoms of which heat of the surface has been very prominently marked.

The origin and early progress of these cases I have had no opportunity of watching, the disease, in the only two instances I have seen, having existed for some weeks previously to coming under my care. Respiration has in both cases been considerably quickened—a condition which was much increased both by corporeal and mental excitement; there has been frequent cough, scanty and viscid expectoration, pains in the sides and back, worse during the early part of the night, increased by pressure, and having altogether very much of the character of periostitis of the ribs. In one of the cases there were attacks of a spasmodic character, occurring generally during the first sleep, and, in many other respects, imitating asthma. The pulse, in both instances, was small, frequent, and quick; the skin hot, dry, and harsh; and there were partial sweats at night, occurring more particularly about the chest. The physical signs observed were the crepitant rattle, dulness on percussion, absence of respiratory murmur, blowing respiration, and bronchophony. One circumstance has struck me as curious in these attacks, and as well worthy of remark; namely, the length of time during which the crepitant rhonchus may continue, without giving place to solidification and its attendant physical phenomena. I shall proceed now briefly to detail the two cases from which the above description has been drawn.

A man, aged thirty-one, had, when he came under my care, (Jan. 1839), been suffering more or less for upwards of three months from cough, difficult expectoration, hurried breathing, much increased by exercise, feeling of tightness and heat within the chest, together with severe pains of the back and sides, worse at night, and much increased by pressure upon the ribs. There was a good deal of feverishness, the pulse being 96, small, and quick; the skin generally hot and dry, but moist upon the chest; the tongue yellowish, white, and furred. A copper-coloured scaly eruption existed on the forehead, and over other parts of the body, and there was a dark redness of the throat, with slight ulceration. The lower part of the chest posteriorly sounded dull upon percussion, and, corresponding to this, there was bronchial respiration and bronchophony. Higher up there existed a well-marked crepitant rhonchus, more extensively diffused over the right than the left side, but equally distinct in both, and giving way gradually to the signs of solidification. This man had a rather severe attack of syphilis twelve months previously; for which he was mercurialized by a surgeon in Liverpool. In August the eruption made its appearance, and, towards the latter end of September, the thoracic symptoms, without, however, his being able to attribute them to any evident external cause. These had precedence for about two months of the affection of the throat. He was cupped between the blade-bones, took two or three saline aperients, and was then ordered blue pill and opium. A good deal of constitutional disturbance was the result, and, although mercury was ordered in different forms and variously combined, its employment was productive of more evil than

good, the pulmonary affection being unalleviated; while the bowels were much disordered, and the whole system thrown inte an irritable state. Five-grain doses of iodide of potassium, with tincture of hop, in decoction of sarsaparilla, were now given three times a day, and the compound soap-pill at bed-time. Within a fortnight there was an evident improvement; and in about ten weeks from the commencement of this plan he was perfectly recovered: the general symptoms, no less than the physical signs, having entirely subsided.

The next case occurred in a young man, aged twenty-five; and the symptoms under which he laboured were so nearly like those in the former patient, that it is unnecessary to take up the time of the reader by detailing them. The pulmonary symptoms had existed for about six weeks; and the physical signs consisted of a well-marked crepitant rhonchus, heard in the lower lobe of the left side, and in the middle of the chest posteriorly on the right side, the upper and lowermost portions being free. Bronchophony and bronchial respiration were no where detectable. He experienced nearly every night, sometimes after lying down in bed, sometimes after an hour or more's sleep, and from which he was thus aroused, an urgent sense of constriction and tightness across the chest, with difficulty of breathing and a feeling of suffocation. These symptoms, after a short continuance, subsided; and the remainder of the night was passed in quiet and placid sleep. This patient had suffered from syphilis eight months previously; and the pulmonary symptoms had arisen about the same time, with nodes upon the shin. He took iodide of potassium, an antispasmodic draught at night, and rubbed mercurial ointment along the spine of the tibia. Under this treatment he improved slowly, but gradually; the crepitant rhonchus diminished, and its place was at length supplied by a healthy respiratory murmur.

The anatomical changes effected in the pulmonary tissues, by the long continuance of syphilitic pneumonia, would seem, from the observations of Professor Van der Kolk, to consist in suppuration, and the formation of abscess:—"Etenim non aro," says he, "in perscrutando cadavera siphiliticorum qui dum vivebant, phthisici videbantur, inveni in pulmonibus præcipue in medio lobo ulcus quoddam seu pus collectum sine ullo tuberculo cingente, ita ut pus quodam cavo contineretur neque membrana cingens aut induratio posset distingui; in ejusmodi pulmonibus nulla pleuræ pulmonalis exsudatio era ut externe et tactu etiam pulmones sanissimos crederes; nisi saltem ulcus nimium adesset, nunquam in lobo superiori pulmonum quod in phthisi purulenta semper fere accidit, has ulcerationes inveni sed non longe ab initio bronchiarum, ita tamen ut medium pulmonis parenchyma occuparet."—p. 130.

It may perhaps be a matter deserving of inquiry, whether the termination of pneumonia in abscess—a subject upon which there has been much and varied discussion—is not, in many cases, to be attributed to syphilitic pneumonia, or to pneumonia occurring from common causes in an individual contaminated with the syphilitic poison. The opinions of Laennec, Broussais, and Andral, respect-

ing the extreme rarity of this termination, and the statement made by so high an authority as the last-mentioned pathologist, of the facility with which all the appearances of abscess are produced by anything approximating to roughness or carelessness in the examination after death, have tended, in a very considerable degree, to divert attention from the occurrence in question, and to shake belief in the probability of its existence. The observations of Schroeder van der Kolk may, perhaps, in the opinions of some, seem obnoxious to the criticisms of Laennec and Andral; but those who, like myself, know the untiring industry with which the Utrecht professor devotes himself to pathological anatomy, and the practical acumen which he evinces in the investigation of morbid structures, will receive with the utmost deference all statements emanating from his pen. These, with the more recent observations of Doctor Stokes, will perhaps, in some degree, tend to remove the scepticism now existing in reference to abscess as a result of pneumonia.

In the communication from Dr. Sadowski, to which I have before referred, I find the following remarks:—"Does lues ever attack the pleura? I had under my care," says he, "a few years since, a man who was dying from syphilis. He had lost his palate, portions of bone had come away from the nose, and there was venereal necrosis of one tibia. He had for some weeks complained a good deal of his chest; of acute pains at various parts, increased by inspiration, and by pressure between the ribs. He coughed a good deal, but had little or no expectoration. Upon examination after death there was found in the right side of the chest a considerable quantity of sero-purulent fluid. The pleura presented, at different parts, elevations of a circular or oval shape, like blebs, but less prominent, varying in size from half to nearly two inches in diameter. Of these elevations there were nine: they were caused by the effusion of a thick yellowish honey-like fluid beneath the pleura. A similar appearance has been mentioned to me, by a physician upon whose accuracy I can rely, as having been observed by him when conducting the post-mortem examination of a woman who died suddenly, and of whose history nothing satisfactory could be learned; but who, the autopsy fully proved, was, at the time of her disease, suffering severely from secondary lues.

The circumstances which, in particular cases, determine syphilitic disease towards the respiratory organs, remain yet to be discovered. Baglivi, in treating of this point, says, "pro varietate conditionis, et status personarum lues gallica variis in locis sedem figit, eosque præ aliis vehementius molestat. Musici ob exercitatos cantu pulmones et ob id nimium laxatos, lue gallica pulmones perpetuo ludente divexantur."* These observations, which were doubtlessly penned in reference to syphilitic diseases of the larynx, will, *mutatis mutandis*, apply with equal force to the bronchial tubes and pulmonary parenchyma; and, when carrying out the

* Opera Omnia Medico practica et anatomica, 4to. Ludg. 1714, p. 97.

general principle, of which his statement is but an illustration, we affirm that congenital or hereditary liability to pulmonary disorder, previous or existing disease in these organs, will be likely to direct the ravages of secondary lues to the lungs, we keep within the bounds of analogy as regards other morbid poisons, although we exceed the very narrow limits within which actual observation would confine us. A question of high practical importance, well deserving of inquiry, is, whether pulmonary disease, produced by common causes, in an individual labouring under secondary syphilis, is thereby modified;—whether an appreciable character is impressed upon it, altering its course and consequences, and rendering necessary a different line of treatment?

Dr. Graves, addressing his pupils of the Meath Hospital, on the subject of syphilitic pulmonary disease, asks,—"How are you to recognize it? Mainly (he says) by the history of the disease. If the patient's sufferings have commenced at a period of time after primary sores on the genitals, when secondary symptoms usually make their appearance; if some of his complaints are clearly traceable to this source; if, along with debility, night sweats, emaciation, nervous irritability, and broken rest at night, we find cough; and if this group of symptoms have associated themselves with others, evidently syphilitic, such as periostitis, sore throat, and eruption on the skin, then may we with confidence refer all to the same origin, and may look upon the patient as labouring under a syphilitic cachexy affecting the lungs as well as the other parts." In this quotation we have a pretty full and very graphic sketch of the circumstances directing the diagnosis; yet in the enumeration there is omitted one phenomenon, which has been present without exception in all cases I have witnessed. I allude to the general aspect of the patient, which is often so peculiar as to declare at once the nature of the disease, or at least to show that the pulmonary affection, whatever be its original cause, is combined with, and its outward indices modified by, the general syphilitic contamination. There is a melancholy and shrunken appearance of countenance; dull, dark, muddy complexion; loss of flesh, particularly manifested in the face, and giving rise to a sunk, haggard, extenuated look. The attitude and manner of the patient, even at rest, are indicative of a want of energy and lassitude; and the actual loss of strength, and consequent incapacity for exertion, is greater than can be accounted for by the loss of flesh. Notwithstanding the presence of all these symptoms, in forming the diagnosis, much caution and care are necessary; "we must not draw our conclusion until we have repeatedly examined the chest by means of auscultation and percussion; if these fail to detect any tangible signs of tubercles, we may then proceed to act upon our decision with greater confidence, and may advise a sufficient, but cautious use of mercury."

This brings us naturally to the treatment most applicable to the cases in question. Particular cases, according to the difference of their symptoms, demand of course corresponding modifications of treatment; but the point to be now discussed is the relative ad-

vantages of the three great remedies of secondary syphilis; to wit, mercury, iodide of potassium, and sarsaparilla; for, in the words of Morton, "ad curationem hujus phthiseos perficiendam omnem mere thoracica et pulmonaria medicamenta sine admixtione anti-veneorum nequicquam valere frequenti experientia fretus assero."

The great armamentarium of almost all the authorities above-mentioned is mercury. Morton thus strongly expresses himself: "Nihil melius excogitari possit quam ulcerum pulmonariam sanationem et crasis sanguinis a fermento venereo eversa restitutionem mercuriali aliqua salivatione tentare." By Doctor Sims it was considered as being the "sole refuge" in this disease, "which never failed performing a cure when taken before the lungs had inflamed and suppurated." Doctor Graves, it has been shown, advocates no less the employment of this medicine. "Under its use," says he, "it is most pleasing to observe the speedy improvement in the patient's looks and symptoms; the fever, night sweats, and watchfulness diminish; he begins to get flesh and strength; and with the symptoms of lues, the cough and pectoral affection disappear." From mercury I, too, have witnessed most rapid and satisfactory recoveries; but, as regards its employment, my experience has been far less extensive than with the iodide of potassium. I am of opinion, that the same rules which guide the practitioner in his choice of mercury of iodide of potassium, as the most appropriate medicine whereon to rely in the treatment of secondary diseases in general, will best direct him in his selection for the cure of syphilitic pulmonary disease; and these being now pretty universally known, need not be dilated on in this place. I would, however, here throw out one suggestion, that mercury should be given only "priusquam vires a longa morbi protractione jam fractæ fuerint."

Accumulated, and yet accumulating, experience attests the value of iodide of potassium in secondary syphilis; and I think it will in none be found more strikingly beneficial than in the cases under discussion. The encomium passed by Doctor Graves on mercury might, I think, with equal justice, be awarded to this medicine. It is free from the injurious effects which occasionally result from mercury, and, although not invariably applicable, is, in my belief, taken altogether, a more valuable remedy.

With mercury, or with iodide of potassium, I have generally combined sarsaparilla. The soothing effect of this medicine upon the nervous system, apart from its specific influence, appears to me less generally admitted than it deserves to be. Recognizing its extreme value, as well in primary as secondary syphilis, when given in combination with other medicines, I almost invariably employ it. To those sceptical regarding its virtues, I would say of it, in reference to syphilitic pulmonary disease, as did Dr. William Hunter of a small bleeding in threatened miscarriage, "it can do no harm, it may do good, and it ought, therefore, never to be omitted."—*Medical Gazette.*

INDEX

TO THE NINETEENTH VOLUME.

A.

	Page.
Abscess between the tunica vaginalis and globe of the eye	351
Acephalocysts, social, in the brain	321
Amputation of the limbs of the fœtus in utero	327
Analysis in the moist way, and by the blowpipe, tables of, by Edward Brittan. *Notice*	99
Aneurism of the popliteal artery	327
of one of the sinuses of Valsalva	468
Antrum, fungus of the	458
Aneurism, on the surgical pathology and treatment of, by William Henry Porter, Esq. A.M. *Notice*	287
Anus, fissures of the, treatment by rhatany	157
Aorta, ossification of	69
Aortic valves, permanent patency of	467
opening, contraction of the	466
Aphonia cured by ammoniacal vapours	143
Arachnitis of the cerebellum and pons varolii.	457
Arsenic, specimen of the effects of, on the gastro-intestinal mucous membrane.	114
in sulphuric acid	150
Artery, femoral effects of ligature upon	267
Asphyxia from wounds in the neck, by Dr. Gabriel Stokes,	28

B.

Blennerhasset, Dr., on the climate of Dingle	220
Bone, caries of the temporal	469, 472
Bowels, ulceration of the lower	79
Brain, on the lymphatics of the	138
Bronchitis, acetate of lead in	135

C.

	Page.
Cancer in the veins, on the origin of	156
Caries of the temporal bone	458
Catheter, on the mode of, introduction of, in difficult cases, by Dr. Charles Patterson, Rathkeale	23
Cerebrum, and cerebellum, fungoid tumour of	455
Chemistry, elements of, by Dr. Robert Kane. *Notice*	445
Chess and phrenology	144
Chest, pathology, &c. of, by Dr. Charles Williams. *Notice*	103
Chilblains, iodine in	130
Consumption, on the rarity of, in Dingle, by Dr. Henry Blennerhasset,	220
Corpora cavernosa, loss of the	465
Corrigan, Dr., practical observations on the diagnosis and treatment of functional derangement of the heart	1
Cynanche, treatment of	131
Cystitis from injury of the spinal marrow	118

D.

Diabetes insipidus	59
iron and zinc in	135
ammonia, in the treatment of	145
Dropsy, ovarian	115
Duncan, Dr. James, F. case of chronic gastritis, by	356

E.

Embalming, M. Gannel's mode of	139
Epigastric pulsation	62
Epilepsy, idiopathic, digitalis in, by Edward Sharkey, A. B., M. D. *Notice*	97
Evers, Dr., on the physiology of the muscles and nerves of the orbit	165
Eyelid, anatomy of the superior	334
Eye, protrusion of, from rheumatic inflammation of the tunica vaginalis	345
Eye, adhesion of the tunica vaginalis to the globe of the	349
Eye, extirpation of the globe of the	354

F.

Ferrall, J. M., Esq., on the anatomy and pathology of certain structures in the orbit	329
Fever, bilious remittent, treat on, by Dr. Arnold. *Notice*	100
Flat foot, specimen of	125
Fungus, hæmatodes	470
Fungus of the antrum	458

G.

Page.
Gastritis, chronic, case of, by Dr. Duncan 356
Geoghegan, T. G., M. D., account of a case of poisoning by monkshood by 401
Globules, remarks on the use of, in relation to absorption, secretion, and morbid deposition, by Thomas Hodgson Watts, M. D. 240, 369
Gonorrhœa, on the seat of, in women 155
Griffin, William, M. D., on the diagnosis of abdominal inflammations 179

H.

Hæmorrhagic diathesis, a case of, by S. Wilmot, A.B., M. D. 234
Hamerton, Clement, Esq., on the venereal poison as present without sexual intercourse 34
Head, a case of injury of, proving fatal after twenty-six years 295
Heart, on the diagnosis and treatment of some functional derangements of the, by Dr. Corrigan . . . 1
compression of the 322
healthy condition of, in typhus 323
enlargement of the 465
Hemp, Indian 158–9
Hernia, researches on the diagnosis of, by P. J. Murphy, Esq., M. D., Liverpool 361
strangulated 366
enormous umbilical 463
Hospital, Sir P. Dun's, clinical report of, by Charles Lendrick, Esq., M. D. 54

I. J.

Jaw, congenital luxation of the lower 119
Inflammation, diffused 57
Inflammation, on the diagnosis of abdominal, by Dr. William Griffin 179
Inflammation, plastic 156
Joint, hip, diseases of the, &c., by William Coulson, Esq. *Review* 277

L.

Leeches, economy in 139
Lees, Cathcart, Esq., M.B., on the ephidemic ophthalmia of 1840, among children 15
Lendrick, Dr. Charles, clinical report of Sir P. Dun's Hospital by 54
Liver, fatty degeneration of 472
Lung, gangrene of the 118, 121
Tumefaction of and dilatation of the side in pneumonia . 122
Lying-in Hospital, Waterford, report of 293

M.

Page.
Materia Medica, Elements of, by Jonathan Pereira, Esq. *Notice* 105
Medicines, nauseous 66
Membranes, serous and mucous, lectures on the morbid anatomy of, by Dr. Thomas Hodgkin. *Notice* . . . 107
Medicine, library of, by Dr. Alexander Tweedie. *Notice.* 450
Midwifery, researches on operative, by Dr. F. Churchill. *Review.* 271
Monkshood, account of a case of poisoning, by Dr. Geoghegan 401
Moxa 65
Murphy, Dr. P. J., Esq., researches on hernia, by . . 361
Museum of the Royal College of Surgeons in Ireland, descriptive catalogue of, by Dr. Houston. *Notice* . . . 440

N.

Nerve, enlarged, traversing diseased structures . . . 117
Neuroma 116

O.

Obstetric Medicine, Atlas of Plates illustrative of, by Dr. Francis Ramsbotham. *Notice* 446
Oculi, inflammation of the tunica vaginalis . . . 343
tumours within the tunica vaginalis 352
Ophthalmia, epidemic, amongst children in the summer and autumn of 1840. By Cathcart Lees, M.B. . . 15
Ophthalmic Hospital, Canton, Tenth Report of, . . . 290
Orbit, anatomy and pathology of certain structures of, not previously described, by J. M. Ferrall, Esq. . . . 329
Orbit, fungus hæmatodes, commencing in the . . . 119
on the physiology of the muscles and nerves of the, by Dr. P. Evers 165
Patterson, Dr., on the catheter in difficult cases . . . 23
Phlebitis of the lateral sinus and internal jugular vein . . 258
Phthisis pulmonalis 72
mercury in the early stage of . . 160, 297
Physicians, account of the origin and early history of the College of, in Ireland, by Dr. Aquilla Smith . . . 81
Pneumonia, acute, in children 270
Potash, hydriodate, in rheumatism of the tunica vaginalis oculi, with protrusion of the eyeball 345
Prostate gland, new and successful method of treating disease of, ... 151
Prostatic disease 70
Pylorus, cancerous disease of the 462

R.

Page.

Ringland, Dr. A.B., M.B., T.C.D., a brief history of the epidemic small-pox, which visited Dublin, in the autumn and winter of 1839-40, by 429

S.

Sensation, on the phenomena of, by Dr. Jas. Johnston, *Notice* 103
Scarlatina 74
Scirrhous development 319
Small-pox epidemic, of 1834-40, history of, by Dr. Ringland, A.B., M.B. 429
Smith, Aquilla, Dr., History of the College of Physicians in Ireland, by 81
Spina bifida 325
Spine, disease of the 273
Stokes, Gabriel, Dr., on Asphyxia, resulting from wounds in the neck 28
Stomach, on the characteristic marks whereby to judge of perforation of, by Dr. Williamson, *Leith* . . . 37
Stomach, on the cause of perforation of, by Dr. Williamson, *Leith* 191
Syphilis 76
Syphilitic diseases of the lung 478

T.

Tannin, a remedy for excessive perspiration, . . . 138
Teetotalism 78
Temperature, influence of 143
Thymus gland, disease of, &c., ... 256
Tumour, sarcomatous, in the tunica vaginalis oculi . . 353
Tumour, fatty, in a new-born child 294
malignant, of the abdomen 323

U. V.

Vade Mecum, anatomist's, by W. Erasmus Wilson, Esq. *Notice* 103
the acoucheur's, by Dr. T. T. Burke. *Notice* 282
Veins, air in the 296
Venereal disease, introduced into the system by other channels than sexual intercourse, by Clement Hamerton, Esq. *Nobber* 34
Veratrine, on the external and internal use of . . . 154
Vesicant, speedy and certain 143
Urinary and stomach diseases, by Dr. Prout. *Notice* . . 102

W.

Page.
Waters of the African coast, analysis of 127
Watts, Dr. Thomas Hodgson, remarks on the use of the globules in absorption, &c. 240, 369
Williamson, Dr., on perforations of the stomach, . 37, 191
Wilmot, S., M. D., case of hæmorrhagic diathesis, by . 234
Womb, impregnated on function and diseases of, by Chas. Waller, Esq. *Notice* 449

END OF VOL. XIX.

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